Draft 2.0

IEEE 802.3bn EPON Protocol over Coax (EPoC) TF Initial Working Group ballot comments

Proposed Responses

Comment ID: 3620

Hajduczenia, Marek
Bright House Networks

Proposed Response

Response Status: W

PROPOSED ACCEPT.

Comment Type: T

Comment Status: D

EZ

"Register 1929 is the most significant part of this number with bit 1.1929.4 being the MSB while register 1927 is the least significant part with bit 1.1927.0 being the LSB." - in previous registers, a much simpler (and clearer format) was used

Suggested Remedy

Change to "Bit 1.1929.4 is the MSB and bit 1.1927.0 is the LSB of the value.". Similar change needed in 45.2.1.148

Response Status: W

PROPOSED ACCEPT.

Comment ID: 3621

Hajduczenia, Marek
Bright House Networks

Comment Type: TR

Comment Status: D

"These bits indicate the time required by a CNU to respond to an EPoC Message Block received on the PHY Link and are a reflection of the PhyLinkRspTm defined in 102.2.6.3." - information on units is missing here - ms, ns, blocks, seconds, etc.

Suggested Remedy

Add information on the units for this register

Response Status: W

PROPOSED REJECT.

Units are clearly specified in the normative definition of PhyLinkRspTm in 102.2.6.3. Duplicate specification can lead to synchronization issues.

Passed by voice without opposition

For (reject):
Against (change variable name):
Abstain:

Comment ID: 3622

Hajduczenia, Marek
Bright House Networks

Comment Type: ER

Comment Status: D

Text is broken by tables.

Suggested Remedy

Please set the orphan control on tables and text to make sure that text is not broken by tables.

Response Status: W

PROPOSED REJECT.

Setting orphan controls causes excessive white space on previous pages which the commenter has objected to in previous comments rounds.
Cl 45 SC 45.2.1.149 P 48 L 50 # 3623

Hajduczenia, Marek
Bright House Networks

Comment Type T Comment Status D
Description in 45.2.1.149 is not consistent with style used in other registers for some reason.

Suggested Remedy
Change text to read:
"Registers 1.1933 and 1.1934 form a 32-bit 10GPASS-XR PMA/PMD FEC codeword counter. Registers 1.1933 and 1.1934 shall be reset to all zeros when 1.1933 and 1.1934 registers are read by the management function or upon 10GPASS-XR PMA/PMD reset. When registers 1.1933 and 1.1934 are read, register 1.1933 is read first and register 1.1934 is latched when (and only when) register 1.1933 is read. These registers are a reflection of the variable FecCodeWordCount defined in 101.3.3.1.6."
Update PICS accordingly.

Similar changes in 45.2.1.150 and 45.2.1.151

Proposed Response Response Status W
PROPOSED REJECT.
The wording & style are directly taken from similar registers existing in the standard (see 45.2.1.94, 45.2.1.95, 45.2.1.103, 45.2.1.106 and others).

Cl 45 SC 45.2.1.149 P 49 L 2 # 3624

Hajduczenia, Marek
Bright House Networks

Comment Type TR Comment Status D
The way number is mapped into register space in Table 45–98q and Table 45–98r is just odd:
lower 13 bits first, then fraction, then middle 16, reserved block, and remaining 5 bits.

Suggested Remedy
Change allocation to 1.1927.15:0 to cover bits [15:0], 1.1928.15:0 to cover bits [31:16],
1.1929.15:14 to cover bits [33:32], and then fractional bits in 1.1929.13:11. We will be left with
1.1929.10:0 for reserved space.
Apply the change to Table 45–98q and Table 45–98r alike.
Remove all references to "UQ34.3 formatted number" - it does not matter at all what format the
original number is in. Replace with "downstream PHY data rate" in Table 45–98q and
"upstream PHY data rate" in Table 45–96r.

Proposed Response Response Status W
PROPOSED REJECT.
The mapping assigns the least significant bit to the lowest numbered register/bits and the
highest significant numbers to the most significant bits. Reserved bits are at the logical top of
the structure. The only reason this look unusual is due to the table style where higher numbered
bits appear first.
Passed by voice without opposition
For (reject):
Against (change variable name):
Abstain:

Cl 45 SC 45.2.1.149 P 49 L 44 # 3625

Hajduczenia, Marek
Bright House Networks

Comment Type E Comment Status D
missing space in "Total FEC codewords counter[15:0]" for 1.1933.15:0 and 1.1934.15:0

Suggested Remedy
Insert missing space in front of "[".

Similar changes in Table 45–98t and Table 45–98u

Proposed Response Response Status W
PROPOSED ACCEPT.
### Proposed Responses

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<td>D</td>
<td>MSB/LSB</td>
<td>Hajduczenia, Marek</td>
<td>Bright House Networks</td>
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**Comment Type**: E - Editorial, T - Technical, TR - Technical/Required

**Comment Status**: D - Dispatched, A - Accepted, R - Rejected

**Response Status**: O - Open, W - Written, C - Closed, U - Unsatisfied, Z - Withdrawn
Cl. 45  SC 45.2.1.162.3  P 55  L 49  # 3631
Hajduczenia, Marek  Bright House Networks

Multiple issues with the description of bits 1.1951.14:0:
- wording does not read really English (rather sloppy sentences)
- no MSB / LSB indication

Suggested Remedy
Reword to read:

"Bits 1.1951.14:0 indicate CNU_ID for the CNU for which the value of PhyLnkDiffTS variable is calculated. Bits 1.1951.14:0 are valid only for the 10GPASS-XR-D PMA/PMD. Bits 1.1951.14:0 are reserved for 10GPASS-XR-U PMA/PMD and always return zero on read. Bits 1.1951.14:0 are a reflection of the PhyLnkDiffTS_CNU variable defined in 101.5.1."

Note that information on MSB/LSB is still missing and needs to be added to k now where the CNU_ID starts and ends.

Proposed Response  Response Status W
PROPOSED ACCEPT IN PRINCIPLE.
Change from
"Bits 1.1951.14:0 indicate on which CNU the value of PhyLnkDiffTS is calculated. Only for timestamps received from the CNUs whose CNU_ID matches the value of these bits are used in the calculation. These bits are only valid in the CLT, in the CNU they are reserved and always read as zero. These bits are a reflection of the PhyLnkDiffTS_CNU variable defined in 101.5.1."

to
"Bits 1.1951.14:0 indicate which CNU the value of PhyLnkDiffTS is to be calculated for. CNUs whose CNU_ID matches the value of these bits are used in the calculation. These bits are only valid in the CLT, in the CNU they are reserved and always return zero. These bits are a reflection of the PhyLnkDiffTS_CNU variable defined in 101.5.1."

Cl. 00  SC 45.2.7a.5  P 61  L 42  # 3632
Hajduczenia, Marek  Bright House Networks

Comment Type  E  Comment Status  D
Comment ID 3632

Double space at the end of the sentence in line 42

Suggested Remedy
Chane ". . " to ". ".

Proposed Response  Response Status W
PROPOSED ACCEPT IN PRINCIPLE.
Changed to Cl.00
Also found at pg/ln in
Cl 45  58/28,  
Cl 100 94/33, and
Cl 102 147/2

Cl. 45  SC 45.2.7a.5.1  P 61  L 46  # 3633
Hajduczenia, Marek  Bright House Networks

Sentence does not read right: "Bit 12.10240.3 when read as a one indicates that the values in the 10GPASS-XR receive MER measurement registers are valid for the channel indicated by the Receive MER channel ID."

Also, it is typical to reference bit numbers, and not name of register bits

Suggested Remedy
Change to "When read as a one, bit 12.10240.3 indicates that the values in the 10GPASS-XR receive MER measurement registers are valid for the OFDM channel indicated by bits 12.10240.2:0."

In line 49, replace "the Receive MER channel ID" with "bits 12.10240.2:0". The same replacement in Table 45–211f in Description field.

Proposed Response  Response Status W
PROPOSED ACCEPT IN PRINCIPLE.
Replace para with
"When read as one, bit 12.10240.3 indicates the 10GPASS-XR receive MER measurement registers are valid. When read as zero, this bit indicates the 10GPASS-XR receive MER measurement registers are not valid. This bit is a reflection of the variable RxMER_Valid defined in 100.2.12.3.1."
It is not clear how the value stored in bits 12.10240.2:0 is then translated into register range 12.10241 through 12.12287. There is also inconsistency between footnote b) and text "In the CLT these bits are read only and will always read as a one."

Suggested Remedy

modify text to read: "The value stored in bits 12.10240.2:0 identifies the OFDM channel for which registers 12.10241 through 12.12287 hold the MER measurement value. Bits 12.10240.2:0 are only valid for 10G-PASS-XR-D PMA/PMD. Bits 12.10240.2:0 are reserved for 10G-PASS-XR-U PMA/PMD and return a zero on read."

Insert the following text in description field for 12.10240.2:0 under existing text:

```
0 0 1 = OFDM channel number 1
0 1 0 = OFDM channel number 2
0 1 1 = OFDM channel number 3
1 0 0 = OFDM channel number 4
1 0 1 = OFDM channel number 5
other values are reserved
```

PROPOSED ACCEPT IN PRINCIPLE.

Change "measure for" to "measured on" (3x)

To the end of the 1st sentence in this para add "except subcarriers one and two"

Which are first two subcarriers? "Note that the first two subcarriers are not reflected and are always excluded."

Suggested Remedy

Modify "Note that the first two subcarriers are not reflected and are always excluded." to read "Note that the first two subcarriers (i.e., subcarriers number 0 and 1) are not reflected in register group 12.10241 through 12.12287 (10G-PASS-XR receive MER measurement registers)."

PROPOSED ACCEPT.

Changed cmt to Cl 45, Scl 45.2.7a.6, pg 62 ln 35.
### Proposed Response: 3639
**Type:** T  **Comment Status:** D  **Page:** 26  **Line:** 32

**Comment ID:** 3639

**Comment:** "samples of the same symbol" - likely, "the same OFDM symbol" to be precise - the term "symbol" is ambiguous

**Suggested Remedy:**
- Change "samples of the same symbol" to "samples of the same OFDM symbol"

**Proposed Response:**

PROPOSED REJECT.

The clarifying "OFDM" is clear from the context: "1.4.170a cyclic prefix: A redundant set of samples prepended to an OFDM symbol"

Note that there are 3 uses of the term symbols in the sentence; one with OFDM and two without.

### Proposed Response: 3640
**Type:** T  **Comment Status:** D  **Page:** 26  **Line:** 47

**Comment ID:** 3640

**Comment:** A data transmission channel in which the transmitted data is carried over a large number of orthogonal QAM subcarriers." - whether the number is large or small is irrelevant to a definition

**Suggested Remedy:**
- Change to "A data transmission channel in which the transmitted data is carried over a number of orthogonal QAM subcarriers."

**Proposed Response:**

PROPOSED ACCEPT.

### Proposed Response: 3641
**Type:** E  **Comment Status:** D  **Page:** 27  **Line:** 6

**Comment ID:** 3641

**Comment:** A fixed point number" - "fixed point" is an adjective in this case, and should be spelled as "fixed-point"

**Suggested Remedy:**
- Change "a fixed point number" to "a fixed-point number"

**Proposed Response:**

PROPOSED ACCEPT.

The commenter is invited to correct a similar error on Wikipedia.org at https://en.wikipedia.org/wiki/Q_(number_format) which opens "Q is a fixed point number format where the number of fractional bits (and optionally the number of integer bits) is specified. ..."
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<td>Attribute aMAUType makes reference to PHYs for different speeds, e.g.:</td>
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<td>10GBASE-PR-D3 One single-mode fiber 10.3125 GBd continuous downstream / burst mode upstream OLT PHY as specified in Clause 75</td>
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<td>Whereas aMAUType in this draft lists PCS/PMA for some reason:</td>
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<td>Coax cable distribution network PCS/PMA continuous downstream / burst mode upstream as specified in Clause 101</td>
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<td>to</td>
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<td>10GBASE-XR Coax cable distribution network PHY continuous downstream / burst mode upstream PHY as specified in Clause 101</td>
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<td>Reserved reserved registers were marked as RO under 802.3bx D3.0 - please align per i-51 (<a href="http://www.ieee802.org/3/bx/comments/P8023-D3p0-Comments_Final_byCls.pdf">http://www.ieee802.org/3/bx/comments/P8023-D3p0-Comments_Final_byCls.pdf</a>)</td>
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Proposed Responses

Comment ID: 3649

Hajduczenia, Marek
Bright House Networks

Proposed Response
Comment Type: ER
Comment Status: D

“When read as a one, bit 1.17.1 indicates that the PMA/PMD is able to operate as ” - in the scope of this document, "PMA/PMD" is clear enough. When merged into the main standard, "PMA/PMD" will become ambiguous.

Suggested Remedy
Add qualifier "10GPASS-XR" before each "PMA/PMD" and "PHY" instance in Clause 45. In this case, change "When read as a one, bit 1.17.1 indicates that the PMA/PMD is able to operate as “ to "When read as a one, bit 1.17.1 indicates that the 10GPASS-XR PMA/PMD is able to operate as “.

PROPOSED REJECT.
In this instance the usage is correct as is since the first PMA/PMD refers to the one being read via MDIO not a specific type of PMA/PMD and is consistent with the rest of Clause 45: "When read as a one, bit 1.17.1 indicates that the PMA/PMD is able to operate as a 10GPASS-XR-D PMA/PMD type.”
A quick scan of the 110 instance of PMA/PMD indicates they are all either proper as is or clear from context.

Comment ID: 3650

Hajduczenia, Marek
Bright House Networks

Proposed Response
Comment Type: E
Comment Status: D

Bit register 1.1900.10 is marked as “R/w” and should be “R/W”.

Suggested Remedy
Per comment

PROPOSED ACCEPT.

Comment ID: 3651

Hajduczenia, Marek
Bright House Networks

Proposed Response
Comment Type: TR
Comment Status: D

Bit 1.1900.2 definition contains unnecessary detail for Clause 45, has ambiguous name, and could use better description.

Suggested Remedy
Change description to read:

1 = frames with detected CRC40 errors are labelled as errored
0 = frames with detected CRC40 errors are not labelled as errored

Change naming of register to “CRC40 errored frames”

Change content of subclause 45.2.1.131.3

Bit 1.1900.2 is used control whether frames with detected CRC40 errors are labelled as errored before being passed to higher layers, as described in 101.3.3.1.4. This bit is a reflection of the variable CRC40ErrCtrl defined in 101.3.3.1.6.

PROPOSED ACCEPT.

Comment ID: 3652

Hajduczenia, Marek
Bright House Networks

Proposed Response
Comment Type: T
Comment Status: D

Bit 1.1900.1 has a footnote, which is a bit odd in Clause 45 registers. The content of the footnote should be moved to description of the register.

Suggested Remedy
This statement is already present in 45.2.1.131.4. Remove footnote b to Table 45–98a

PROPOSED ACCEPT.
IEEE 802.3bn EPON Protocol over Coax (EPoC) TF Initial Working Group ballot comments

Proposed Responses

Draft 2.0

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Comment Type: T | Comment Status: D

Statement could use some wording improvement: “This bit is defined in 10GPASS-XR-U PMA/PMD only, in 10GPASS-XR-D always read as a one” to be more symmetric for U and D PHYs. Also, use explicit reference to what bit number it is :) 

Suggested Remedy

Change “This bit is defined in 10GPASS-XR-U PMA/PMD only, in 10GPASS-XR-D always read as a one” to “Bit 1.1900.1 is defined for the 10GPASS-XR-U PMA/PMD only. Bit 1.1900.1 is always read as a one for the 10GPASS-XR-D PMA/PMD.”

Proposed Response | Response Status: W

PROPOSED ACCEPT IN PRINCIPLE.

<table>
<thead>
<tr>
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<td>Hajduczenia, Marek</td>
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Comment Type: T | Comment Status: D

Unnecessary requirement (IMO): “Bit 1.1900.0 shall default to zero so that no transmission...” - it is also a repition of the statement in line 49.

Suggested Remedy

Change “Bit 1.1900.0 shall default to zero so that no transmission...” to “Bit 1.1900.0 defaults to a zero so that no transmission...” 

Remove line 50, page 38 - it is not needed any more

Alternatively, strike the sentence “Bit 1.1900.0 shall default to zero so that no transmission is allowed by the EPoC CNU or CLT prior to being properly configured to operate in the coaxial cable distribution network under which it is being installed.” altogether leaving line 50 inact - the reasons for setting it to zero are irrelevant to the spec.

Proposed Response | Response Status: W

PROPOSED ACCEPT IN PRINCIPLE.

Strike:

“Bit 1.1900.0 shall default to zero so that no transmission is allowed by the EPoC CNU or CLT prior to being properly configured to operate in the coaxial cable distribution network under which it is being installed.”

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</table>

Comment Type: T | Comment Status: D

“When read as a one, bit 1.1900.1 indicates that the 10GPASS-XR PHY has completed PHY Discovery” ... since this subclause is in the PMA/PMD register block, likely we should be speaking of “PMA/PMD” and not “PHY”

Suggested Remedy

Change “PHY” to “PMA/PMD” in subclause 45.2.1.131.4 and other subclauses in 45.2.1

Proposed Response | Response Status: W

PROPOSED ACCEPT IN PRINCIPLE.

Make the suggested change at the discretion of the Editor. Note that in some instances PHY is correct (see cmt# 3657).

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<tr>
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<td>Hajduczenia, Marek</td>
</tr>
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</table>

Comment Type: E | Comment Status: EZ

“The default value for bit 1.1900.1 is zero.” - “zero” or “a zero”?
I find more instances of where “a zero” and “a one” is used than “zero” / “one” with no preceding article.

Suggested Remedy

Consider aligning the use of articles before “one” / “zero”

Proposed Response | Response Status: W

PROPOSED ACCEPT IN PRINCIPLE.

Globally change “a zero” to “zero” (14x) and “a one” to “one” (25x)
### Proposed Responses

<table>
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</table>

**Hajduczenia, Marek**

**Bright House Networks**

#### Comment Type T

**Comment Status D**

**Soc**

What is "CLT output port"? There are 6 instances (plus 1 in TOC) without definition.

**SuggestedRemedy**

Change "output port" to "PHY", which seems to be closest in 802.3 terminology to what you're trying to achieve...

Same on page 39, line 24: "output port of the CLT" should be converted into "CLT PHY" or "CLT PHY transmitter"

#### Proposed Response

**Response Status W**

PROPOSED ACCEPT IN PRINCIPLE.

Changed to Cl 00 as impacts Cl 100 also

Change all instances of "output port" in Cl 45 to "PHY".

In CL 100 pg 117

In 30 change:

*"100.3.1 CLT RF output port muting requirement" to
*"100.3.1 CLT RF output muting requirement"

In 34 change:

*"The output return loss of the output port" to
*"The output return loss at TP1/MDI"

In 39 change:

*"RF output port = 73 dBc" to
*"RF output power = 73 dBc"

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</table>

**Hajduczenia, Marek**

**Bright House Networks**

#### Comment Type E

**Comment Status D**

**EZ**

"normal operations" - likely, "normal operation" or "normal operating conditions"

**SuggestedRemedy**

Per comment

#### Proposed Response

**Response Status W**

PROPOSED ACCEPT IN PRINCIPLE.

Change to: "operation"
IEEE 802.3bn EPON Protocol over Coax (EPoC) TF Initial Working Group ballot comments

Proposed Responses

**Proposed Response**

Comment ID: 3661

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<td>Bright House Networks</td>
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**Comment Type**: TR

**Comment Status**: D

"CLT operates as normal" - typically, PHYs have "normal mode" and "test mode" defined, so it is easy to reference them "CLT PMA/PMD enters the normal mode" or "CLT PMA/PMD enters the test mode"

**Suggested Remedy**

Define "test mode" with a subclause in the draft - right now, test requirements are kind of spread all over the place, popping up in different subclauses. This needs to be organized in a way where we can point to a single location (at best) where the test mode is defined. Make sure that it is called "test mode" consistently in the draft - right now it is referenced to as "test conditions", "test operation", etc.

Anything else will be called "normal mode".

Change then when "bit 1.1901.15 is set to a one the output port of the CLT is muted for testing purposes, when this bit is set to a zero the CLT operates as normal (see 100.1.3)" to read "When bit 1.1901.15 is set to a one, the CLT PMA/PMD transmitter enters the test mode and it is muted. When bit 1.1901.15 is set to a zero, the CLT PMA/PMD enters the normal mode." - it is also not clear what the reference to "(see 100.1.3)" was really supposed to do in this statement - it does not point to anything that describes normal or test mode.

**Proposed Response**

**Response Status**: W

PROPOSED ACCEPT IN PRINCIPLE.

With the exception of CLT output port muting, we don't define a general test or normal mode.

Note that subclause 100.3 was created based on the Commenter's prior comments to group what are testing conditions into a separate subclause, this includes operational and performance requirements that must be met when the system placed into specified conditions; e.g. test conditions.

Change: "When bit 1.1901.15 is set to a one the output port of the CLT is muted for testing purposes, when this bit is set to a zero the CLT operates as normal (see 100.1.3)" to read "When bit 1.1901.15 is set to a one, the CLT PMA/PMD transmitter enters the test mode and it is muted. When bit 1.1901.15 is set to a zero, the CLT PMA/PMD enters the normal mode." - it is also not clear what the reference to "(see 100.1.3)" was really supposed to do in this statement - it does not point to anything that describes normal or test mode.

Change to Clause 100 as this is the only clause which speaks to test conditions.

During Comment resolution change to Clause 00 as the change as described applies to several clauses.

Change to Clause 00 as this is the only clause which speaks to test conditions.

**Proposed Response**

**Response Status**: W

PROPOSED ACCEPT IN PRINCIPLE.

In General change to:

"in units of OFDM clock period (1/204.8 MHz)"

Editors to scrub the draft and align all clock names to one of:

"OFDM Clock"

"OFDM Master Clock"

"OFDM Symbol Clock"

"Subcarrier Clock"

**Proposed Response**

**Response Status**: W

**Clock Terminology Soc**

**Proposed Response**

**Response Status**: W

**Clock Terminology Soc**

**Proposed Response**

**Response Status**: W

**Clock Terminology Soc**

"These bits are a reflection of the variable" - I would suggest to follow the recently received comment on D1.5 of 802.3bp (http://www.ieee802.org/3/bp/comments/8023bp_D15_approved.pdf, comment 24) and change "These bits" to "Bits 1.1901.6:4"

**Suggested Remedy**

Apply the same type of changes everywhere where "these bits", "the bits", "this bit" is still in use in Clause 45 to make these references explicit.

**Proposed Response**

**Response Status**: W

PROPOSED REJECT.

The bits are clearly identified in the beginning sentence of the paragraph "Bits 1.1901.11:7 indicate". "These bits" later in the paragraph clearly refers to the same bits.

---

**Comment ID**: 3662

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<td>Bright House Networks</td>
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**Comment Type**: TR

**Comment Status**: D

Clause 45 is the "only" location where the term "OFDM clock sample" is used. In Clause 101 it has many names, including "OFDM symbol clock", "sample clock period" and others.

**Suggested Remedy**

Please align the terminology and avoid defining PHY-specific parameters in Clause 45 that are not aligned with what is used in PHY clause 101.

Once the proper term is defined by TF, change "Bits 1.1901.6:4 indicate the size, in OFDM clock samples (204.8 MHz)." to "Bits 1.1901.6:4 indicate the size, expressed in multiples of XXX (see xxx).", where XXX is the term that is selected and xxx is the reference where it is defined in Clause 101.

There are at least several other locations in Clause 45 where similar changes are needed:

45.2.1.132.5, 45.2.1.134.3, 45.2.1.134.4, 45.2.1.142.1, 45.2.1.144, 45.2.1.146, given that they rely on the same unit.

**Proposed Response**

**Response Status**: W

PROPOSED ACCEPT IN PRINCIPLE.

**Proposed Response**

**Response Status**: W

**Proposed Response**

**Response Status**: W

---

**Comment ID**: 3663

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<td>Bright House Networks</td>
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**Comment Type**: ER

**Comment Status**: D

"These bits are a reflection of the variable" - I would suggest to follow the recently received comment on D1.5 of 802.3bp (http://www.ieee802.org/3/bp/comments/8023bp_D15_approved.pdf, comment 24) and change "These bits" to "Bits 1.1901.6:4"

**Suggested Remedy**

Apply the same type of changes everywhere where "these bits", "the bits", "this bit" is still in use in Clause 45 to make these references explicit.

**Proposed Response**

**Response Status**: W

PROPOSED REJECT.

The bits are clearly identified in the beginning sentence of the paragraph "Bits 1.1901.11:7 indicate". "These bits" later in the paragraph clearly refers to the same bits.

---

**Comment ID**: 3664

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**Comment Type**: ER

**Comment Status**: D

"These bits are a reflection of the variable" - I would suggest to follow the recently received comment on D1.5 of 802.3bp (http://www.ieee802.org/3/bp/comments/8023bp_D15_approved.pdf, comment 24) and change "These bits" to "Bits 1.1901.6:4"

**Suggested Remedy**

Apply the same type of changes everywhere where "these bits", "the bits", "this bit" is still in use in Clause 45 to make these references explicit.

**Proposed Response**

**Response Status**: W

PROPOSED REJECT.

The bits are clearly identified in the beginning sentence of the paragraph "Bits 1.1901.11:7 indicate". "These bits" later in the paragraph clearly refers to the same bits.
Proposed Responses

**CLI 45 SC 45.2.1.132.4 P 39 L 44 # 3664**

Hajduczenia, Marek  
Bright House Networks

Comment Type E  
Comment Status D

Formatting inconsistency for "DSNrp" - it is italicized everywhere else.

Suggested Remedy

Italicize it

Proposed Response  
Response Status W

PROPOSED ACCEPT.

**CLI 45 SC 45.2.1.133 P 40 L 12 # 3665**

Hajduczenia, Marek  
Bright House Networks

Comment Type T  
Comment Status D

OFDM channel numbering in Table 45–98c could be improved. Rather than say "first", "second", etc., it is simpler to say "OFDM channel number 1", "OFDM channel number 2".

Suggested Remedy

Change "This specifies the center frequency of subcarrier 0 of the first OFDM channel." to "This >>register<< specifies the center frequency of subcarrier 0 of the >>OFDM channel number 1<<." - note the changes marked in >><<

Apply to all registers in Table 45–98c and their descriptions in individual subclauses.

Proposed Response  
Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

Wording seems consistent with other parts of CL 45.2.1 (ex see 45.2.1.66-69, 45.2.1.128 (in which only part of the register is used), 45.2.1.129 and many others.

For MSB/LSB issue see Cmt# 3669

**CLI 45 SC 45.2.1.134 P 41 L 10 # 3667**

Hajduczenia, Marek  
Bright House Networks

Comment Type E  
Comment Status D

Contrary to state diagrams, we are not very pressed for space in Clause 45 when defining register/ bit names.

Suggested Remedy

Rename "Rnd" to "Random seed" in Table 45–98d and title of 45.2.1.134.1

Rename "RB size" to "Resource Block size" in Table 45–98d and title of 45.2.1.134.2

Proposed Response  
Response Status W

PROPOSED ACCEPT.

**CLI 45 SC 45.2.1.134.2 P 41 L 28 # 3668**

Hajduczenia, Marek  
Bright House Networks

Comment Type E  
Comment Status D

Missing space in "RB size(1.1907.7)" between register name and opening paren

Suggested Remedy

Proposed Response  
Response Status W

PROPOSED ACCEPT.
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**Comment ID** 3670

**Response Status** W

**Hajduczenia, Marek**

**Bright House Networks**

**Comment Type** TR

**Comment Status** D

**Suggested Remedy**

Given that these are "state diagram" variables, and not registers, we should not really care about how many bits these have. It would be much more consistent to define it as an 8-bit unsigned integer and then apply individual values as follows:

- 7 = 768 samples
- 6 = 640 samples
- 5 = reserved
- 4 = 512 samples
- 3 = reserved
- 2 = 384 samples
- 1 = reserved
- 0 = 256 samples

Bit assignment here does not matter at all, and allows you to add future values as needed, without playing around with bits and reserved values. I understand this is the way it is done in DOCSIS, but it is unnecessary and adds complexity in definitions of variables in state diagrams.

There are also other variables defined in the very same way without any need.

**Proposed Response** PROPOSED REJECT.

Clearly an enumeration is just as clear as mapping values. Commonality with DOCSIS may add some small value. The objective is not to make it easy to generate the standard but easy to implement. Furthermore changing this to an 8 bit integer would break the register mapping in CI 45 forcing the MANUAL renumbering of all registers after 1907 and possibly introducing errors in the standard in the process.

Passed by voice without opposition

For (reject):

Against (change variable name):

Abstain:
### Proposed Responses

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**Comment 3671**

- **Comment Type**: ER
- **Comment Status**: D

Comment: missing reference in "reflection of the variable Type2_Repeat defined in ."

**Suggested Remedy**

Add the missing reference

**Proposed Response**

**PROPOSED ACCEPT.**

Add: "101.4.3.6.1"

**Comment 3672**

- **Comment Type**: T

Comment: it is not clear what "normal" means for 1.1910.10 and 1.1910.2 - no copy is being made? The value of zero is also not defined in respective subclauses 45.2.1.137.2 and 45.2.1.137.5

**Suggested Remedy**

Either add definition of what the value of zero means in subclause, or rename "normal" to something more descriptive

**Proposed Response**

**PROPOSED ACCEPT IN PRINCIPLE.**

In table change "normal" to "no copy initiated"

In subclause add after 1st sentence "When read as zero this bit indicate no copy is to be initiated."

**Comment 3674**

- **Comment Type**: E

Comment: unnecessary "." in "Configuration ID and profile activation."

**Suggested Remedy**

Remove "."

**Proposed Response**

**PROPOSED ACCEPT.**
<table>
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<td>* &quot;Bits 1.1910.9:8 indicate the value of the most recently received upstream Configuration ID bits (see 102.2.3.1).&quot; - it is not clear what reference to 102.2.3.1 is supposed to clarify here. Figure 102–1 does not help here either.</td>
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<tr>
<td></td>
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<td></td>
<td><strong>Either add reference to upstream Configuration ID bits in 102.2.3.1 and leave the reference here intact, OR, add here reference to specific terms used in 102.2.3.1 to define individual fields. Right now these are not tied in any way and the reference makes no sense.</strong></td>
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<td>&quot;with bit 1.1913:0 being the LSB and bit 1.1914:1 being the MSB&quot; - likely, &quot;bring&quot; should be &quot;being&quot;</td>
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<td><strong>Suggested Remedy</strong></td>
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<td>&quot;this process which is fully described in 102.4.1&quot; - no need to qualify whether it is fully or not fully described somewhere else</td>
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</table>

**Proposed Response**

"The intent here is to allow the CLT to process multiple CNU Discovery responses simultaneously as this will be a relatively lengthy process. Given there is only one register for CNU_ID assignment there needs to be a handshaking protocol between the CLT Management which is ultimately controlling CNU_ID values and the CLT/CNU PHYs. The entire process is explained in 102.4.1 and it's subclauses, in particular cl 102.4.1.6 which is directly referenced."

Change:

"The value of bits 1.1915:14:0 are used to indicate to the 10GPASS-XR PHY a valid CNU_ID value. The value may be assigned to a new CNU when the associated CNU_ID assigned flag is set to zero, ..." to

"Bits 1.1915:14:0 indicate to the 10GPASS-XR PHY a valid CNU_ID value. The value may be assigned to a new CNU when CNU_ID assigned flag (bit 1.1915.15) is set to zero, ..."
Draft 2.0

IEEE 802.3bn EPON Protocol over Coax (EPoC) TF Initial Working Group ballot comments

Proposed Responses

Hajduczenia, Marek
Bright House Networks

Comment Type T
Comment Status D

Unnecessarily wordy definition and uses style different from other register definitions.

Suggested Remedy

Change to read:

Bit 1.1915.15 indicate if the associated CNU_ID value has been assigned to a CNU. When bit 1.1915.15 is set to a one, the associated CNU_ID has been assigned to a CNU. When bit 1.1915.15 is set to a zero, the associated CNU_ID has not been assigned. See 102.4.1.6 and 102.4.3 for additional details on the use of bit 1.1915.15. This bit is a reflection of the variable AssgndCNU_ID defined in 102.4.1.8.2.

PROPOSED ACCEPT IN PRINCIPLE.

In 45.2.1.142 change

"… hold the MAC address of the CNU corresponding to …" to

"… hold the MAC address of the CNU, as determined by the PHY Discovery process, corresponding to …"

Hajduczenia, Marek
Bright House Networks

Comment Type T
Comment Status D

Unnecessary information in Table 45-98l: "as determined by the PHY Discovery process" - how this is determined is irrelevant to register definition

Suggested Remedy

Remove “as determined by the PHY Discovery process” from Table 45-98l

PROPOSED ACCEPT IN PRINCIPLE.

PROPOSED REJECT.

This register is reserved for future expansion into 64b MAC addresses which the commenter has indicated is eminent.

Optionally we could include a description of the reserved register noting it’s intended future use.

Passed by voice without opposition
For (reject):
Against (change variable name):
Abstain:
### Proposed Response

**Comment Type:** ER  
**Comment Status:** D

What is the different between "signed 32-bit integer" and "32-bit integer"? We explicitly use the word "unsigned" when we care only about non-negative values (0 onwards), use "signed" when we care that we can represent negative values. When no qualifier is present, does it mean we do not care?

**Suggested Remedy**

Use "signed" when negative numbers are expected to be stored, and "unsigned" when non-negative values are expected. Scrub Clause 102 and Clause 103 to make all integer variables consistent.

**Proposed Response**

PROPOSED ACCEPT IN PRINCIPLE. 

Add "unsigned" where required.

Note that "signed integer" does not appear in Section 5 of P802.3bx Draft 3.2 so this request seems somewhat arbitrary. If the commenter feels strongly it is suggested a maintenance request be submitted against the standard.

---

**Comment ID:** 3684  
**Page:** 17 of 124  
**TYPE:** TR/technical required  
**COMMENT STATUS:** D/dispatched  
**RESPONSE STATUS:** O/open

---

**Comment ID:** 3682  
**Page:** 17 of 124  
**TYPE:** TR/technical required  
**COMMENT STATUS:** D/dispatched  
**RESPONSE STATUS:** W/written

---

**Comment ID:** 3683  
**Page:** 17 of 124  
**TYPE:** TR/technical required  
**COMMENT STATUS:** D/dispatched  
**RESPONSE STATUS:** W/written

---

**Comment ID:** 3684  
**Page:** 17 of 124  
**TYPE:** TR/technical required  
**COMMENT STATUS:** D/dispatched  
**RESPONSE STATUS:** W/written
This text does not pertain to Clause 45; "The PHY power offset is used to set the CNU upstream transmitter power by indicating the relative change in transmission power level the CNU is to make in order that transmissions arrive at the CLT at the desired power level. " - it has to do with the way the power level is set on the CNU and not with the register itself.

**Proposed Remedy**
Move the selected text to 102.4.1.6.

**Proposed Response**
PROPOSED ACCEPT IN PRINCIPLE.

Change pg fm 47 to 48

"Bits 1.1924.7:0 represent a signed 8-bit value in units of 1/4 dB. The PHY power offset is used to set the CNU upstream transmitter power by indicating the relative change in transmission power level the CNU is to make in order that transmissions arrive at the CLT at the desired power level. For more information on the use of these bits see 102.4.1.6. These bits are a reflection of the variable PhyPowerOffset defined in 102.4.1.8.2."

**Proposed Response**
PROPOSED REJECT.

The optional CL 45 register is one of numerous ways to implement control of a managed variable. The important point is not definition of the register but definition of the variable which is clear in 101.4.2.4.5. Duplicating the specification in CL 45 may lead to out of sync definitions and ambiguity if one definition is changed and not the other.
Proposed Responses

**Proposed Response**

Cl 45 SC 45.2.1.165 P 57 L 1  # 3692
Hajduczenia, Marek Bright House Networks

Comment Type T Comment Status D

Table 45–98ai contains several b) footnotes, which should be converted into text

SuggestedRemedy

Remove all b) footnotes from Table 45–98ai.
Insert the followi text: "Bits 1.1953.8:0 are valid only for 10GBASS-XR-D PMA/PMD. Bits 1.1953.8:0 are reserved for 10GBASS-XR-U PMA/PMD and always read as zero." in 45.2.1.165.1 and then applied also to other subclauses: 45.2.1.165.2, 45.2.1.165.3, 45.2.1.165.4, and 45.2.1.165.5, with changes to bit numbers.

**Proposed Response** Response Status W

PROPOSED ACCEPT.

---

Cl 45 SC 45.2.1.164 P 56 L 31  # 3690
Hajduczenia, Marek Bright House Networks

Comment Type E Comment Status D

"The assignment of bits in the US target receive power register register " - one too many "register" instances

SuggestedRemedy

remove one of "register" instances

**Proposed Response** Response Status W

PROPOSED ACCEPT.

---

Cl 45 SC 45.2.1.164 P 56 L 24  # 3691
Hajduczenia, Marek Bright House Networks

Comment Type T Comment Status D

Missing information on unit and MSB/LSB location in 45.2.1.164. Also, footnote b) from Table 45–98ah should be moved to the main text and not hanging in the table

SuggestedRemedy

Add information on unit and MSB/LSB location in 45.2.1.164
Remove footnote b) in Table 45–98ah
Insert the following text at the end of line 33: "Bits 1.1952.9:0 are valid only for 10GBASS-XR-D PMA/PMD. Bits 1.1952.9:0 are reserved for 10GBASS-XR-U PMA/PMD and always read as zero."

**Proposed Response** Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

Per comment except for MSB/LSB issue see CMT# 3669

---

Cl 45 SC 45.2.7a P 58 L 29  # 3694
Hajduczenia, Marek Bright House Networks

Comment Type E Comment Status D

Double ":" at the end of line: "The assignment of bits in the DS OFDM channel ID register is shown in Table 45–211b."

SuggestedRemedy

Replace ".." with ".."

**Proposed Response** Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

Do global search.

---

Cl 45 SC 45.2.7a.1 P 58 L 29  # 3694
Hajduczenia, Marek Bright House Networks

Comment Type E Comment Status D

Double ":" at the end of line: "The assignment of bits in the DS OFDM channel ID register is shown in Table 45–211b."

SuggestedRemedy

Replace ".." with ".."

**Proposed Response** Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

Changed to Cl 00
Do global search.
Comment ID: 3695

Hajduczenia, Marek  Bright House Networks

Comment Type: E  Comment Status: D  EZ

Suggested Remedy:
chane "defined in 101.4.2.4.5" to "defined in 101.4.2.4.5."

Proposed Response  Response Status: W
PROPOSED ACCEPT.

Comment ID: 3696

Hajduczenia, Marek  Bright House Networks

Comment Type: T  Comment Status: D  EZ

Suggested Remedy:
Add "(i.e., subcarriers number 0 through 3)" after "first four subcarriers"

Proposed Response  Response Status: W
PROPOSED ACCEPT.

Comment ID: 3697

Hajduczenia, Marek  Bright House Networks

Comment Type: T  Comment Status: D  EZ

Suggested Remedy:
Change "Changing these registers does not affect the active profile, only the inactive profile" to "Changing registers 12.1 through 12.1023 affects only the inactive profile"

Proposed Response  Response Status: W
PROPOSED ACCEPT.

Comment ID: 3698

Hajduczenia, Marek  Bright House Networks

Comment Type: E  Comment Status: D  EZ

Suggested Remedy:
Add missing "." at the end of sentence

Proposed Response  Response Status: W
PROPOSED ACCEPT.

Comment ID: 3699

Hajduczenia, Marek  Bright House Networks

Comment Type: E  Comment Status: D  EZ

Suggested Remedy:
Remove "i" 

Proposed Response  Response Status: W
PROPOSED ACCEPT.
Proposed Responses

<table>
<thead>
<tr>
<th>Comment ID</th>
<th>Page 21 of 124</th>
</tr>
</thead>
<tbody>
<tr>
<td>3700</td>
<td></td>
</tr>
</tbody>
</table>

**Comment 3700**

**Cl 45 SC 45.2.7a.2.1**

**Proposed Response**

Hajduczenia, Marek  
Bright House Networks

**Comment Type**  TR  **Comment Status**  D

"See the variable definition for interpretation of individual bits" - this is not the correct way to approach it - definitions of registers should be self-standing and not rely on cross-reference elsewhere. Details of where and why individual values are set are not important in Clause 45.

**SuggestedRemedy**

Remove "See the variable definition for interpretation of individual bits" in 45.2.7a.2.1, 45.2.7a.2.2, 45.2.7a.2.3, and 45.2.7a.2.4

Add the following definition in Table 45-211c, in Description for 12.1.15:12 under "Modulation profile for subcarrier 7"

<table>
<thead>
<tr>
<th>15</th>
<th>14</th>
<th>13</th>
<th>12</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
</tbody>
</table>
| 0  | 1  | 1  | 1  | Excluded subcarrier
| 1  | 1  | 0  | 0  | 16384-QAM
| 1  | 0  | 1  | 0  | 8192-QAM
| 1  | 0  | 0  | 0  | 4096-QAM
| 1  | 0  | 0  | 0  | 2048-QAM
| 1  | 0  | 0  | 0  | 1024-QAM
| 0  | 1  | 0  | 0  | 512-QAM
| 0  | 1  | 0  | 0  | 256-QAM
| 0  | 1  | 1  | 0  | 128-QAM
| 0  | 1  | 1  | 0  | 64-QAM
| 0  | 1  | 0  | 1  | 32-QAM
| 0  | 1  | 0  | 0  | 16-QAM
| 0  | 0  | 1  | 1  | 8-QAM
| 0  | 0  | 1  | 0  | QPSK
| 0  | 0  | 0  | 1  | BPSK
| 0  | 0  | 0  | 0  | null

Repeat bit assignment in 12.1.11:8, 12.1.7:4, and 12.1.3:0 in the same fashion. Similar changes in 45.2.7a.3 and subclauses.

**Proposed Response**  **Response Status**  W

PROPOSED REJECT.

On the contrary Cl 45 is optional in its entirety. All normative information is contained in the variable definition. Duplication of this information may lead to inconsistencies and ambiguity.

Passed by voice without opposition

For (reject):

Against (change variable name):

Abstain

**Comment 3701**

**Cl 45 SC 45.2.7a.4**

**Proposed Response**

Hajduczenia, Marek  
Bright House Networks

**Comment Type**  E  **Comment Status**  D

"the imaginary number setting for subcarrier 0 and so on" - since this is a complete example, "so on" is not needed

**SuggestedRemedy**

Remove "and so on"

**Proposed Response**  **Response Status**  W

PROPOSED ACCEPT.

**Comment 3702**

**Cl 45 SC 45.2.7a.4**

**Proposed Response**

Hajduczenia, Marek  
Bright House Networks

**Comment Type**  T  **Comment Status**  D

The text "Each number is a 16-bit signed fractional number conforming to the Q2.14 format." should reference to register format and not some "number". Q2.14 represents a real number, with 16 bits (2+14) and requires no more explanation - real number implies fractional already

**SuggestedRemedy**

Change text to read: "The value in each register is a real number in Q2.14 format."

**Proposed Response**  **Response Status**  W

PROPOSED ACCEPT IN PRINCIPLE.

Change to

"The value in each register is in a Q2.14 format."

Obviously if it is in Q2.14 it is a real number (or maybe it is really imaginary).

**Comment 3703**

**Cl 56 SC 56.1**

**Proposed Response**

Hajduczenia, Marek  
Bright House Networks

**Comment Type**  E  **Comment Status**  D

"Furthermore, EFM also introduces the concept of EPON Protocol over Coax (EPoC)" - but we also have statement "EFM also introduces the concept of Ethernet Passive Optical Networks (EPONs)"; making it a list of "also" statements looking just odd

**SuggestedRemedy**

Change "EFM also introduces the concept of Ethernet Passive Optical Networks (EPONs)" to "EFM introduces the concept of Ethernet Passive Optical Networks (EPONs)" and use proper markup for the removed word "also"

**Proposed Response**  **Response Status**  W

PROPOSED ACCEPT.
Editorial markup gone wrong in: "Clause 76, and the RS for EPoC P2MP topologies is described in Clause 101"

Suggested Remedy
remove underline under "Clause 76" and add it under "Clause 101"

Proposed Response
PROPOSED ACCEPT.
Align with comment #3988.

missing space at the end of "These rates are based on maximum mandatory modulation format in Table 100-3"

Suggested Remedy
Add missing space

Proposed Response
PROPOSED ACCEPT IN PRINCIPLE.
Missing a period, not a space.

"in downstream direction and up to 1.6 Gb/s in upstream direction" - missing "the" before "downstream" and "upstream"

Suggested Remedy
For consistency, it seems that it is "the downstream direction" and "the upstream direction" everywhere else

Proposed Response
PROPOSED ACCEPT.

Looking at Table 100-1, the use of "_" in names of PMA/PMD variables is very inconsistent. It does not add to readability in any way, and just make typing them and reading them more complex.

Suggested Remedy
Since the use of "_" in variable names is not consistent, and does not seem to follow any pattern at all, remove all "_".

Proposed Response
PROPOSED REJECT.
This is "make work" for the editors at this point and may introduce problems.
*PMD functions are implementation dependent* - here, "implementation dependent" is an adjective and should have a hyphen

**Suggested Remedy**

Change all instances of "implementation dependent" to "implementation-dependent"

**Proposed Response**

PROPOSED ACCEPT.

---

"Both I_value and Q_value are encoded as 32-bit signed integers" - in other locations, names of parameters are italicized

**Suggested Remedy**

Italicize the names of parameters I_value and Q_value in 100.2.1.2 and in 100.2.1.2 - compare the use of italics in 100.2.1.4

**Proposed Response**

PROPOSED ACCEPT.

---

"Clause 100, Clause 101 and Clause 102"

**Suggested Remedy**

Change to "Clause 100, Clause 101, and Clause 102"

**Proposed Response**

PROPOSED ACCEPT.

---

"PHY_Overhead(). returns the number of octets that the PHY inserts during transmission of a particular packet."

**Suggested Remedy**

Remove ".-" after "()" and before "returns"

**Proposed Response**

PROPOSED ACCEPT.
Proposed Responses

Comment ID 3716

<table>
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<th>SC</th>
<th>103.3.3</th>
<th>P 315</th>
<th>L 48</th>
<th># 3716</th>
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<tr>
<td>How much is &quot;largely&quot; ? 50%? 75%? Undefined quantifiers are not needed ...</td>
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<tr>
<td>SuggestedRemedy</td>
<td>Remove the word &quot;largely&quot;</td>
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Comment ID 3717

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<td>In other locations, variables were italicized ...</td>
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<tr>
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<td>Italicize laserOnTime, laserOffTime, rfOnTime, and rfOffTime</td>
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Comment ID 3718

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<th>P 318</th>
<th>L 26</th>
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<tr>
<td>If there are no functions defined, remove 103.3.3.3 altogether</td>
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<td>Per comment</td>
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Comment ID 3719

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<tr>
<td>Figure 100-2 contains plenty of acronyms that are not immediately easily expandable to the full meaning</td>
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<tr>
<td>SuggestedRemedy</td>
<td>Please expand all acronyms from Figure 100-2 in the same way as they were done in Figure 100-1. The same comment applies to Figure 100-3, Figure 100-4, and Figure 100-5.</td>
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<td>PROPOSED ACCEPT IN PRINCIPLE.</td>
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</tr>
<tr>
<td>There are three new acronyms that are different than Figure 100-1 is &quot;IFFT&quot; (change to &quot;IDFT&quot; with this comment), &quot;FCP&quot;, and will move &quot;CPW&quot; to this list also. Expand &quot;RS&quot; to &quot;Reconciliation&quot; in the function box to match 100-1. Suggest not replicating all the acronyms from Figure 100-1.</td>
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<tr>
<td>Note: the intro and Figures 100-2 through 100-5 will be moving to Clause 101 after these changes have been made. As per comment #4021.</td>
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Comment ID 3720

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<tr>
<td>Figure 100-2 through Figure 100-5 use very inconsistent capitalization for block names. Is there any reason why you use &quot;Gearbox&quot; but for example &quot;FEC DECODER&quot; (or other block names??)</td>
<td></td>
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</tr>
<tr>
<td>SuggestedRemedy</td>
<td>Rationalize block names. For example, &quot;FEC DECODER&quot; should be &quot;FEC Decoder&quot;, &quot;64B/66B DECODER&quot; would become &quot;64B/66B Decoder&quot;, etc. This is applicable to Figure 100-2 through Figure 100-5</td>
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</tr>
<tr>
<td>The &quot;Gearbox&quot; function was removed in a prior comment round and missed getting updated in this figure. Removing also removes the mentioned inconsistency as we are using all CAPS for functional block names consistently (mostly).</td>
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<tr>
<td>Action: 1) Remove &quot;Gearbox&quot; function box from Figure 100-5 and adjust figure accordingly. 2) change any lower case to CAPS in the mentioned figures except for cross references.</td>
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</table>
Comment Type ER  Comment Status D  EZ

"10GPASS-XR" with em-dash or "10GPASS-XR" with normal hyphen.

Suggested Remedy
Looking at recent projects and the way the PMD/PHY names are spelled out, normal hyphen seems to be used. Please change all instances of "10GPASS-XR" with em-dash to "10GPASS-XR" with normal hyphen

Proposed Response  Response Status W
PROPOSED ACCEPT IN PRINCIPLE.
Peter says "it is a dash (not and en dash or an em dash)." Further make sure non-breaking (Esc - h). Verify/change throughout document to verify dash.

Changed to Clause 00.

Proposed Response  Response Status W
PROPOSED ACCEPT IN PRINCIPLE.
Change "in XXX" to "in units of XXX" where appropriate as this is consistent with the standard.
IEEE 802.3bn EPON Protocol over Coax (EPoC) TF Initial Working Group ballot comments

Proposed Responses

<table>
<thead>
<tr>
<th>Comment ID</th>
<th>Comment Type</th>
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<th>Comment</th>
<th>Response Status</th>
<th>Suggested Remedy</th>
<th>Proposed Response</th>
</tr>
</thead>
<tbody>
<tr>
<td>3725</td>
<td>ER</td>
<td>D</td>
<td>Text in &quot;SEND FRAME&quot; state uses different font size and type than other states - please align</td>
<td>W</td>
<td>Per comment</td>
<td>PROPOSED ACCEPT IN PRINCIPLE. Good catch. Change &quot;MAC:MA_DATA.request(DA,SA,m_sdu_tx)&quot; to Ariel 8 pt to be consistent with template and rest of figure.</td>
</tr>
<tr>
<td>3726</td>
<td>ER</td>
<td>D</td>
<td>Text style !!!</td>
<td>W</td>
<td>Use the proper text style in 103.3.1 and in 103.3.1</td>
<td>PROPOSED ACCEPT IN PRINCIPLE. Good catch. Reset to para style T,Text !!!</td>
</tr>
<tr>
<td>3727</td>
<td>ER</td>
<td>D</td>
<td>Missing closing paren in MA_CONTROL.request and MA_CONTROL.indication in Figure 103–14, Similarly in Figure 103–16, MA_CONTROL.request and MA_CONTROL.indication</td>
<td>W</td>
<td>Add missing closing paren in both Figures</td>
<td>PROPOSED ACCEPT.</td>
</tr>
<tr>
<td>3728</td>
<td>ER</td>
<td>D</td>
<td>This is the first time that I see state diagrams defined in Tables :)</td>
<td>W</td>
<td>Change all &quot;Table&quot; cross references in lines 10-20 to &quot;Figure&quot;</td>
<td>PROPOSED ACCEPT IN PRINCIPLE. Good catch. Change to Ariel 8 pt to be consistent with template and rest of figure.</td>
</tr>
<tr>
<td>3729</td>
<td>ER</td>
<td>D</td>
<td>Wrong text format for &quot;MCI:MA_DATA.request(DA, SA, m_sdu_ctl)&quot;</td>
<td>W</td>
<td>Apply proper text format per comment</td>
<td>PROPOSED ACCEPT IN PRINCIPLE. Good catch. Change to Ariel 8 pt to be consistent with template and rest of figure. (Note MACI(REGISTER, SA, LLID, status ? deregistered) already in proper fmt)</td>
</tr>
</tbody>
</table>
Proposed Responses

**Proposed Response**

<table>
<thead>
<tr>
<th>Comment ID</th>
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<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>3731</td>
<td>T</td>
<td>D</td>
<td>&quot;10GPASS-XR PHYs in service&quot; - I believe you do not want to enable unidirectional mode on CNU only.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td><strong>Suggested Remedy</strong></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Modify the text to &quot;10GPASS-XR-U PHYs in service&quot;</td>
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**Proposed Response**

<table>
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<th>Description</th>
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<tr>
<td>3732</td>
<td>T</td>
<td>D</td>
<td>Caption of Figure 100-2 is incorrect: there are no &quot;transmit PCS, PMA, and PMD sublayers&quot; - there are &quot;PCS, PMA, and PMD sublayers, transmit direction&quot;.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td><strong>Suggested Remedy</strong></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Change caption for Figure 100-2 to read: &quot;Functional blocks within 10GPASS-XR-D CLT PCS, PMA, and PMD sublayers, transmit direction&quot;.</td>
</tr>
</tbody>
</table>

**Proposed Response**

<table>
<thead>
<tr>
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<th>Comment Type</th>
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<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>3733</td>
<td>T</td>
<td>D</td>
<td>&quot;a variable rate that is determined when configured&quot; - and what happens when PHY is reset, power cycled, or conditions on the cable plant change? I believe data rate reconfiguration takes place then as well, yet it is not listed here.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td><strong>Suggested Remedy</strong></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Provide text describing conditions under which data rate for EPoC PHY is determined. I assume it happens when the PHY is power cycled / reset, conditions on CCDN change to force changes in the number of ODFM carriers, and due to operator configuration change.</td>
</tr>
</tbody>
</table>

**Proposed Response**

<table>
<thead>
<tr>
<th>Comment ID</th>
<th>Comment Type</th>
<th>Comment Status</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>3734</td>
<td>T</td>
<td>D</td>
<td>Last column, line 38 contains statement &quot;as above&quot; - does it mean that this cell should contain value of 15:12? If so, why not just copy it in?????</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td><strong>Suggested Remedy</strong></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Per comment - it is not clear what value is intended to be here. 15:12 seems like a likely suspect. There are also other instances of &quot;as above&quot; in the table without any need. Please use explicit values - such redesignations are not needed.</td>
</tr>
</tbody>
</table>

**Proposed Response**

<table>
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<th>Comment ID</th>
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<th>Comment Status</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>3734</td>
<td></td>
<td></td>
<td>Replace &quot;as above&quot; at Pg/Ln with entry for index listed:</td>
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</table>

**Proposed Response**

<table>
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<tr>
<th>Comment ID</th>
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<th>Description</th>
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<tbody>
<tr>
<td>3734</td>
<td></td>
<td></td>
<td>Replace &quot;as above&quot; at Pg/Ln with entry for index listed: Pg/Ln Index</td>
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<td></td>
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<td>85/7 1024</td>
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<td>85/36 11241</td>
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### Proposed Responses

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<th>Comment Type</th>
<th>Comment Status</th>
<th>Proposed Response</th>
<th>Response Status</th>
<th>Page 28</th>
<th>9/8/2015 6:20:53 PM</th>
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<tbody>
<tr>
<td>3735</td>
<td>100.2.1.2</td>
<td>86</td>
<td>21</td>
<td></td>
<td>CI 100 SC 100.2.1.2 P 86 L 21 # 3735</td>
<td>Hajduczenia, Marek Bright House Networks</td>
<td>Comment Type T Comment Status D</td>
<td>&quot;one modulated symbol encoded as an I / Q value pair &quot; - what is this &quot;I/Q value pair&quot;?</td>
<td>SuggestedRemedy Given that the &quot;I/Q value pair&quot; has not yet been defined and Clause 100 is where it is encountered first, either a) define it here, or b) put a reference to where it is defined so that a reader does not need to wonder what it is and what it is supposed to represent.</td>
<td>Proposed Response</td>
<td>Response Status W</td>
</tr>
</tbody>
</table>
Confusing operator "=>" - it seems like an assignment operator

Suggested Remedy
Change "=>" to ">=", which is what I believe you intend to mean here (greater than or equal)

PROPOSED ACCEPT IN PRINCIPLE.
Change the following:
1) All "=>" change to "<="
2) All "elseif" change to "else if"
3) Page 307, Line 51, "[length] needs to be "[length"
4) Page 307, Line 53, insert a line with "}" before the "else" to satisfy the else if bracket on line 51.

"GntSize += length + ceiling(length/64) + fecPrtySz[0];" but before you define symbols for ceiling and floor functions

Suggested Remedy
change "ceiling" to ceiling function symbol per 77.2.2.4.
Also, to guarantee proper order of execution, you might want to change the line "GntSize += length + ceiling(length/64) + fecPrtySz[0];" to read "GntSize += (length + ceiling(length/64) + fecPrtySz[0]);" to make sure that GntSize is incremented by the sum of three elements on the right and not just length itself. Same change in line 49, and line 1 on page 308

PROPOSED ACCEPT.
Add to the end of the first sentence of 103.1.6: "in pseudo code listing the term ceiling() is used for this function" so the entire sentence reads:
"For equations used in this clause the symbol represents a ceiling function that rounds up its argument x to the next highest integer; in pseudo code listings the term "ceiling()" is used for this function."

Note that the spelling of "it's" in the draft has a typo.

Note the ceiling character could be added using the char code 00E9 & 00F9 (latin "e" with acute) in Symbol font via the utilities -> Character Palette menu however this would not work with any known compiler and is contrary to the common practice of putting pseudo code in Courier New font.

"For P2MP coaxial topologies, EFM supports EPoC operating with a nominal bit rate of up to 10 Gb/s in the downstream direction and up to 10 Gb/s in the upstream direction," - based on available upstream channel allocation, I am not sure how 10 Gb/s operation could be even theoretically achieved

Suggested Remedy
Drill down the upstream data rates from 10 Gb/s to something that is more appropriate given the number of available upstream OFDM channels

Similiar modification will be needed on page 68, line 53

Note that Table 56-1, Table 67-1, and even 100.1 list upstream speed as "up to 1.6 Gb/s"
**IEEE 802.3bn EPON Protocol over Coax (EPoC) TF Initial Working Group ballot comments**

**Proposed Responses**

amplifier turn on to the PMD; either the PCS data detector or the PHY Link may signal ON. When both the PCS and the PHY Link set the value to OFF, this signals RF power amplifier turn off to the PMD.

**Comment #3744**

<table>
<thead>
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<td>100</td>
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<td>80</td>
<td>40</td>
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Hajduczenia, Marek
Bright House Networks

**Comment Type:** TR

**Comment Status:** D

**Proposed Response**

<table>
<thead>
<tr>
<th>Comment ID</th>
<th>Page 30 of 124</th>
</tr>
</thead>
</table>

**Figure 100-3**

Figure 100-3 has two instances of "PMD_SIGNAL.request()" entering PMD FUNCTIONS block from two different locations, which implies that they are one and the same, yet they are generated by different blocks.

**Suggested Remedy:**

Rationalize the names of primitives as listed in the comment. One of them should be different. If they were to be the same (as 100.2.1.4 seems to imply), PMD_SIGNAL.request() should enter first PHY Link block and then leave going into PMD FUNCTIONS block, which is not the case. Then the PMD_SIGNAL.request() primitive can be generated in an additive fashion, and not create potential race conditions (what happens if one block sets it to ON and another to OFF - which takes priority then???)

Once the change is done, text describing the race condition on page 78, lines 1-7 can be simplified, to list only the fact that PMD_SIGNAL.request() is generated by either of the blocks in a cascade manner.

**Proposed Response**

| Response Status | W |

PROPOSED ACCEPT IN PRINCIPLE.

1) Modify Figure 100-3 to move left side PCS originated PMD_SIGNAL.request() to right side. Move PMD Functions to left to show both of these signals from PCS and PHY Link being "or'd" into the PMD_SIGNAL.request() that is input to the PMD FUNCTIONS block. Only label the output of the OR function as "PMD_SIGNAL.request()". (Technically, this is an OR signal bus with two generators and one detector.)

2) Page 86, Line 46. Remove the single sentence paragraph beginning with "In the upstream direction."

3) Change para beginning line 59:

"The semantics of the service primitive are PMD_SIGNAL.request(Tx_Enable). The Tx_Enable parameter can take on one of two values: ON or OFF, determining whether the PMD transmitter is on (enabled) or off (disabled). The Clause 101 PCS generates this primitive to indicate a change in the value of Tx_Enable parameter. Upon the receipt of this primitive, the Clause 100 PMD turns the transmitter on or off as appropriate." to

"In the CNU only, the semantics of the service primitive are PMD_SIGNAL.request(Tx_Enable). The Tx_Enable parameter can take on one of two values: ON or OFF, determining whether the PMD transmitter is on (enabled) or off (disabled). Upon the receipt of this primitive, the Clause 100 PMD turns the transmitter on or off as appropriate."

4) Change para beginning Page 87, Line 1:

"In the CNU only both the PCS data detector and the PHY Link may set PMD_SIGNAL.request() (see 101.3.2.5.7 and 102.3.1.3). In the PMD, the ON value is the OR product of the PMD_SIGNAL.request() set to the value ON from the PCS data detector with that from the PHY Link, signaling RF power amplifier turn on to the PMD; either the PCS data detector or the PHY Link may signal ON. When both the PCS and the PHY Link set the value to OFF, this signals RF power amplifier turn off to the PMD."

As input the PMD, PMD_SIGNAL.request() is the OR product of the signal from PCS data detector (see 101.3.2.5.7) with that from the PHY Link (see 102.3.1.3) signaling RF power

**Comment #3745**

<table>
<thead>
<tr>
<th>CI</th>
<th>SC</th>
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<th>L</th>
<th>#</th>
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<tr>
<td>100</td>
<td>100.1.4</td>
<td>83</td>
<td>10</td>
<td>3745</td>
</tr>
</tbody>
</table>

Hajduczenia, Marek
Bright House Networks

**Comment Type:** TR

**Comment Status:** D

**Proposed Response**

**Response Status:** W

PROPOSED ACCEPT IN PRINCIPLE.

Line 9. Change: "is defined in this clause" to "is defined in clause, with DS data rate calculation in 100.2.6.1"

Line 13: Change "is defined in this clause" to "is defined in clause, with US data rate calculation in 100.2.6.2"

Coordinate changes with Comment #3708

"The data rate of a 10GPASS-XR PHY is dependent on network configuration (see Table 56-1), - yet Table 56-1 lists only maximum values (up to) and says nothing about conditions you're referencing here, or what the relationship between said network conditions and effective data rate is.

**Suggested Remedy:**

It seems that reference to 100.2.6.1 and 100.2.6.2 for downstream and upstream directions, respectively, would be much better here, since at least you explain there how data rate is calculated.

**Types:** TR/technical required  ER/editorial required  GR/general required  T/technical  E/editorial  G/general

**Comment Status:** D/dispatched A/accepted R/rejected  

**Response Status:** O/open W/written C/closed U/unsatisfied Z/withdrawn

**Sort Order:** Comment ID

9/8/2015 6:20:54 PM
Proposed Response

The statement "There are a number of variables, constants and functions that are complementary to those defined for EPON Multipoint MAC Control but that are unique to EPoC. These are listed in Table 103-1." speaks of variables and functions complementary to EPoC, but unique to EPoC - given that Clause 103 is defined as standalone and relies only minimally on Clause 77, there is little sense to list such variables / functions.

Suggested Remedy

Remove the statement and Table 103-1 - there is nothing it adds to understanding MPCP for EPoC and only introduces confusion by speaking of complementary but unique variables / functions.

PROPOSED REJECT.

This statement and Table 103-1 will be beneficial to the reader in understanding the subtle differences between the existing MAC control for EPON and what is needed for EPoC. Should the TF reconsider this position the table can be removed.

Passed by voice without opposition

For (reject):
Against (change variable name):
Abstain:

Proposed Response

The principles of Multipoint MAC Control is the same as those described in 77.2.1 for EPON." - either you define Clause 103 as delta from Clause 77 for EPoC, or you define it as standalone, and reference Clause 77 as little as possible. Now it is neither.

Suggested Remedy

Discuss in TF and decide whether Clause 103 is supposed to be standalone relative to Clause 77 (and then content in 103.2.1 needs to replicated from Clause 77) or just a delta from Clause 77 (then a lot of text is not needed, e.g., 103.1.4, 103.1.5, etc. could be removed with pointers to Clause 77)

My personal opinion is that the second approach (delta) would be simpler to maintain, but might be harder to read. The first approach creates cleaner specification, but creates a complete copy of Clause 77 where changes specific to EPoC are very few and far between.

PROPOSED REJECT.

(as there will be no changes to the draft due to this comment). This was already discussed by the TF and it was decided the delta approach would be best (an yes it is easier to maintain).

Passed by voice without opposition

For (reject):
Against (change variable name):
Abstain:
Draft 2.0

IEEE 802.3bn EPON Protocol over Coax (EPoC) TF Initial Working Group ballot comments

Proposed Responses

<table>
<thead>
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<th>Type</th>
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<th>Comment</th>
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<tr>
<td>3750</td>
<td>TR</td>
<td>D</td>
<td>This constant represents the approximate size of FEC codeword in whole octets - is strikes me that approximate value requires information about precision, which is not given</td>
<td>PROPOSED REJECT.</td>
<td></td>
</tr>
<tr>
<td>3751</td>
<td>TR</td>
<td>D</td>
<td>This constant represents the exact size of the FEC codeword expressed in units of octets - there is no such unit as whole and fractional octets. There are just octets</td>
<td>PROPOSED ACCEPT IN PRINCIPLE.</td>
<td></td>
</tr>
<tr>
<td>3752</td>
<td>TR</td>
<td>D</td>
<td>Definition of Octet_CLK is unclear - the way it reads, it is held in TRUE state all the time</td>
<td>PROPOSED ACCEPT IN PRINCIPLE.</td>
<td></td>
</tr>
<tr>
<td>3753</td>
<td>TR</td>
<td>D</td>
<td>This constant represents the exact size of the FEC codeword expressed in units of octets.</td>
<td>PROPOSED ACCEPT IN PRINCIPLE.</td>
<td></td>
</tr>
</tbody>
</table>
Proposed Response

**Comment ID: 3754**

**Comment Type**: TR

**Comment Status**: D

**Proposed Response**

Very confusing definition of packet_initiate_delay variable - first we provide its definition and then say it is defined elsewhere - which is it then?

**Suggested Remedy**

Decide whether the variable packet_initiate_delay is defined in here in 103.2.2.3 (and then remove any references to 77.2.2.3) or it is defined through reference to 77.2.2.3 (and then local definition is not needed)

**Proposed Response**

PROPOSED REJECT.

The intent here is to make the clause easier to understand for those familiar with EPON. The wording used here is specifically non-normative as the ruling definition is that being adopted from Cl 77. However, the commenter has noted before that it is poor form to expect a reader to constantly shift back and forth between different clauses, especially when they are in different Sections of the Standard, thus the initial definition in Cl 103 includes the definition and a ref back to the def in Cl 64 or 77 whereas subsequent definitions in Cl 103 only the initial def in Cl 103. Should the TF wish to reconsider this strategy this change would be in order.

Also see Cmt# 3746

Passed by voice without opposition

For (reject):
Against (change variable name):
Abstain:

---

**Comment ID: 3755**

**Comment Type**: TR

**Comment Status**: D

**Proposed Response**

PROPOSED REJECT.

Even if the variable is used in equation, it is not defined there - Type, description are missing - reference to Equation 101-1 would be then placed in Value: statement

**Suggested Remedy**

Add missing type and description. Add “Value: see Equation 101-1”

**Proposed Response**

PROPOSED REJECT.

The standard does not specify a value for variables. Type is clearly indicated in the referenced normative definition and should not be duplicated to avoid inconsistency/synchronization issues.

Passed by voice without opposition

For (reject):
Against (change variable name):
Abstain:

---

**Comment ID: 3756**

**Comment Type**: TR

**Comment Status**: D

**Proposed Response**

PROPOSED ACCEPT IN PRINCIPLE.

Add variables:

- fecPldSz TYPE: integer fecPldSz is an alias for DS_FEC_Pld_Sz
- fecCwSz TYPE: real number fecCwSz is an alias for DS_FEC_CW_Sz_FRAC

**Proposed Response**

PROPOSED ACCEPT.

Add beta parameter from PHY_Overhead function definition - it is calculated internally anyway.

Roll beta calculation into Derating_Overhead function - there is space for it and it is the only location where it is used anyway. Then remove it from definition of Derating_Overhead, which really needs to take just "length" parameter

**Suggested Remedy**

Remove beta parameter from PHY_Overhead function definition - it is calculated internally anyway.

Also see CMT# 3761, 3762

Also change in Fig 103-8

Passed by voice without opposition

For (reject):
Against (change variable name):
Abstain:
Comment Type: TR  Comment Status: D  Hajduczenia, Marek  Bright House Networks

**Proposed Response:**

**FEC_CODEWORD_SIZE_FRAC, FEC_PAYLOAD_SIZE, and FEC_PARITY_SIZE** are NOT defined anywhere.

**Suggested Remedy:**

Please define what FEC_CODEWORD_SIZE_FRAC, FEC_PAYLOAD_SIZE, and FEC_PARITY_SIZE are.

**PROPOSED ACCEPT IN PRINCIPLE.**

Change FEC_CODEWORD_SIZE_FRAC, FEC_PAYLOAD_SIZE, and FEC_PARITY_SIZE to DS_FEC_CW_SZ_FRAC, DS_FEC_Pld_SZ, and DS_FEC_Prty_SZ, respectively.

---

Comment Type: TR  Comment Status: D  Hajduczenia, Marek  Bright House Networks

**Proposed Response:**

**XGMII_Rate and PCS_Rate** is not defined in Clause 103. They are defined in Clause 101, but they should be listed as variables / constants in 103.2.2.3 and then point back to definition in Clause 101.

**Suggested Remedy:**

Per comment

**PROPOSED ACCEPT.**

---

Comment Type: TR  Comment Status: D  Hajduczenia, Marek  Bright House Networks

**Proposed Response:**

"length <= sizeof(data_t) + tailGuard" is assigned value only to be used in the next line - no need to create a local variable that is consumed in the next line

**Suggested Remedy:**

remove "length <= sizeof(data_t) + tailGuard"

change "packet_initiate_delay <= PHY_Overhead(length, B)" to "packet_initiate_delay <= PHY_Overhead(sizeof(data_t) + tailGuard, B)"

Note another comment about the use of Beta in equations, which does not change at all and does not need to be passed explicitly into functions!!!

**Proposed Response:**

**PROPOSED ACCEPT IN PRINCIPLE.**

See CMT# 3757.

Change to "packet_initiate_delay <= PHY_Overhead(sizeof(data_t) + tailGuard)"
Cl 103 SC 103.2.2.7 P 314 L 40 # 3762
Hajduczenia, Marek
Bright House Networks

Comment Type: TR
Comment Status: D

Beta

Note another comment about the use of Beta in equations, which does not change at all and does not need to be passed explicitly into functions!!!

Suggested Remedy
Remove Beta in line 40 - it does not need to be passed explicitly into functions within SDs - it is not set anywhere in SD anyway

PROPOSED ACCEPT IN PRINCIPLE.
See CMT# 3757.

Cl 103 SC 103.3.2.4 P 315 L 43 # 3763
Hajduczenia, Marek
Bright House Networks

Comment Type: TR
Comment Status: D

"The CLT shall ensure that a minimum gap time between bursts from any two CNUs equal to the transmission time of one (1) resource block expressed in units of time_quantaum." - what is the duration of the said "resource block" and where is it defined?

Suggested Remedy
There is no need to recalculate "resource block" into time_quanta as long as there is definition of the said "resource block". Provide definition (or reference to definition) of resource block and remove "expressed in units of time_quantaum"

PROPOSED ACCEPT IN PRINCIPLE.

Proposed Response Response Status: W

rfOffTime, soc

Hajduczenia, Marek
Bright House Networks

Cl 103 SC 103.3.3.1 P 317 L 26 # 3764

Comment Type: TR
Comment Status: D

rfOn/OffTime, soc

"This variable holds the time required to terminate the RF and is included for consistency with Clause 77." What does it even mean? Something is passed through an interface and it is not even needed?
If the same interface was to be reused, it was modified already, since discoveryInformation was removed anyway.

Suggested Remedy
Remove rfOffTime, rfOnTime definitions in 103.3.3.1 (not needed) and remove it from all primitives (apparently not needed at all). Similarly, it is not clear why "syncTime" is being used if it is zero for EPoC - just assign zero explicitly rather than create a variable and then assign zero to it !!!!

PROPOSED REJECT.
rfOffTime occurs 25 times and rfOffTime occurs 25 times in the draft. In addition there are the phrases "RF On Time" and "RF Off Time". syncTime occurs 6 times. It is felt by the TF that maintaining consistency with Cl 77 SD's out weights the need to simplify the SD's in the Draft.
The TF may wish to reconsider this position.

Passed by voice without opposition
For (reject): Against (change variable name):
Abstain:

Proposed Response Response Status: W

rfOn/OffTime, soc

Hajduczenia, Marek
Bright House Networks

Cl 103 SC 103.3.3.5 P 319 L 4 # 3765
Hajduczenia, Marek
Bright House Networks

Comment Type: TR
Comment Status: D

rfOn/OffTime, soc

"sync_time: The time interval required to stabilize the receiver at the CLT." - but before it was stated that sync_time is not needed (and defined only for compatibility with EPON, whatever it means)

Suggested Remedy
Remove sync_time parameter from MA_CONTROL.request( DA, GATE, discovery, start, length, discovery_length, sync_time) primitive, respective MPCPDUs and state diagrams in 103.3.3.6

PROPOSED REJECT.
See Cmt# 3764

Proposed Response Response Status: W

rfOn/OffTime, soc
IEEE 802.3bn EPON Protocol over Coax (EPoC) TF Initial Working Group ballot comments

Proposed Responses

Cl 103 SC 103.3.3.5 P 319 L 27 # 3766
Hajduczenia, Marek Bright House Networks

Comment Type: TR  Comment Status: D
rfOn/OffTime, Soc

But before it was stated that rfOnTime / rfOffTime do not have really any meaning in EPoC.

SuggestedRemedy

Remove rfOnTime / rfOffTime from primitives
MA_CONTROL.request(DA,REGISTER_REQ,status,rfOnTime,rfOffTime) and
MA_CONTROL.indication(REGISTER_REQ, status, flags, pending_grants, RTT, rfOnTime,
rfOffTime) and MA_CONTROL.request(DA, REGISTER, LLD, status, pending_grants,
rfOnTime, rfOffTime) as well as from respective MPCPDUs

Proposed Response  Response Status: W
PROPOSED REJECT.
See Cmt# 3764

Cl 103 SC 103.3.3.6 P 324 L 17 # 3767
Hajduczenia, Marek Bright House Networks

Comment Type: TR  Comment Status: D

Condition missing for transition between "WAIT FOR REGISTER_ACK" state and
"COMPLETE DISCOVERY" state.
Missing exit conditions from "COMPLETE DISCOVERY" state

SuggestedRemedy

Insert the missing conditions, likely following Figure 77–22

Proposed Response  Response Status: W
PROPOSED ACCEPT IN PRINCIPLE.
Changed from Pg 324 to 325
Between WAIT FOR REGISTER_ACK and COMPLETE DISCOVERY add opcode_rx =
REGISTER_ACK
Between COMPLETE DISCOVERY and VERIFY ACK add flag_rx = ACK
Between COMPLETE DISCOVERY and DISCOVERY NACK add flag_rx != ACK

Cl 103 SC 103.3.4 P 327 L 1 # 3768
Hajduczenia, Marek Bright House Networks

Comment Type: TR  Comment Status: D

The whole Report Processing is an exact mirror copy of Report Processing from Clause 77.

SuggestedRemedy

Leave "Report processing in EPoC is as described in 77.3.4." and remove everything else
within 103.3.4 - repetition is not needed, there are no EPoC specific changes here.

Proposed Response  Response Status: W
PROPOSED ACCEPT.
IEEE 802.3bn EPON Protocol over Coax (EPoC) TF Initial Working Group ballot comments

Proposed Responses

Cl 103 SC 103.3.6.1 P 339 L 28 # 3770
Hajduczenia, Marek Bright House Networks

Comment Type TR Comment Status D

rFOn/OffTime, Soc

The GATE used in EPoC is the same as that described in 77.3.6.1 with the following exceptions. In EPoC rFOnTime and rFOffTime replace laserOnTime and laserOffTime, respectively. The 16-bit Discovery Information register described in 77.3.6.1 is not used in EPoC; all bits in this register are reserved and ignored on reception.

Based on the reading of text previous to 103.3.6, I was under impression that rFOnTime and rFOffTime is not used at all and assigned always zeros - see 103.3.3.1. In this case, there is no need to shuttle them back and forth between CNU and CLT.

Suggested Remedy

Replace "The GATE used in EPoC is the same as that described in 77.3.6.1" with "The GATE MPCPDU used in EPoC is the same as that described in 77.3.6.1".

Replace "In EPoC rFOnTime and rFOffTime replace laserOnTime and laserOffTime, respectively. The 16-bit Discovery Information register described in 77.3.6.1 is not used in EPoC; all bits in this register are reserved and ignored on reception." with "The laserOnTime, laserOffTime, and Discovery Information fields described in 77.3.6.1 are not used in EPoC and are always set to zero on transmit and ignored on reception."

Remove Figure 103-30 and Table 103-2 - they are not needed at all - reference to 77.3.6.1 is sufficient to cover GATE MPCPDU.

Remove all instances where rFOnTime and rFOffTime is used explicitly in primitives and definitions - these are not needed. Respective fields in MPCPDUs should be set to zeros explicitly in state diagrams.

Similarly, in 103.3.6.3, change "In EPoC rFOnTime and rFOffTime fields replace Laser On Time and Laser Off Time fields, respectively. The 16-bit Discovery Information register described in 77.3.6.3 is not used in EPoC; all bits in this register are reserved and ignored on reception." to read "The laserOnTime, laserOffTime, and Discovery Information fields described in 77.3.6.3 are not used in EPoC and are always set to zero on transmit and ignored on reception."

Remove Figure 103-32 - they are not needed at all - reference to 77.3.6.1 is sufficient to cover GATE MPCPDU.

Similarly, in 103.3.6.4, change "In EPoC the Sync Time field is calculated using rFOnTime, rFOffTime rather than the laserOnTime and laserOffTime used in 77.3.6.4." to read "The Target Laser On Time and Target Laser Off Time fields described in 77.3.6.4 are not used in EPoC and are always set to zero on transmit and ignored on reception."

Proposed Response Response Status W

PROPOSED REJECT.

See Cmt# 3764

Cl 103 SC 103.3.6.2 P 340 L 52 # 3771
Hajduczenia, Marek Bright House Networks

Comment Type TR Comment Status D

Statement "The REPORT description for EPoC is identical to that of EPON."

Suggested Remedy

Change to "The REPORT MPCPDU used in EPoC is the same as that described in 77.3.6.2."

Remove all other content of 103.3.6.2, including Figure 103–31

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

Add to the end of the commented sentence "(see 64.3.6.2)"

Remove extra period and Fig 103-31 as suggested.

Cl 103 SC 103.4.3.4 P 349 L 5 # 3772
Hajduczenia, Marek Bright House Networks

Comment Type TR Comment Status D

Multiple issues with MP PICs:

- MP1: structure references 77.3.6 as normative, but Value points to Figure 103-29. Replace with proper Figure from Clause 77
- two MP16 entries: second one should be MP17
- the purpose of second MP16 is unclear: "MAC Control interface has prioroty over other clients" tracing the reference to "shall" indicates "In this case, one of the interfaces with a pending MAC Control frame shall be enabled as described in 64.2.2.4." but this statement back references 64.2.2.4, which has no such requirement. This item should be removed, together with the respective sentence in 103.2.2.4, which makes little sense.

Suggested Remedy

Per comment.

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

AIP - MP1: Replace fig ref with "Figure 77–31"
Accept - two MP16 entries: Replace second MP17 with one MP17
AIP - the purpose of second MP16 is unclear: Replace ref to 103.2.2.4 with 64.2.2.4
- From 64.2.2.4
   *SelectFrame()
This function enables the interface, … except for the case when some of the pending frames have LengthType = MAC_Control. In this case, one of the interfaces with a pending MAC Control frame shall be enabled."
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Comparing Gate Processing state diagram at CLT for EPoC and EPON (Figure 77–28), for some reason transition from SEND GATE / PERIODIC TRANSMISSION states is made back to WAIT state and not back to WAIT FOR GATE state as it is in Figure 77–28

**Suggested Remedy**

There is no justification for this change - please align with Figure 77–28

**Proposed Response**

PROPOSED ACCEPT.

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It seems that Gate processing in EPoC uses the very same state diagrams as the ones used in EPON, with changes only to some of the values / parameters and their definitions:
- min_processing_time has different value in EPoC than in EPON
- BurstOverhead has different definition
- minor changes in effectiveLengthC relative to effectiveLength
- minor changes in maxDelay
- major changes in minGrantLengthC relative to minGrantLength
- minor changes in mdlyTrmC

**Suggested Remedy**

Rather than replicate everything from 103.3.5, I suggest to do what follows:
- under 103.3.5, use the following text: "The Gate processing in EPoC is as described in 77.3.5, with changes to the following constants, variables, and functions as listed in the following subclauses."
  - insert "103.3.5.1 Constants" with the following text: "See constants defined in 77.3.5.1, with the following EPoC-specific exceptions. + add min_processing_time definition and new value" + add only variables changed in EPoC
  - change for "103.3.5.3 Functions" and "103.3.5.4 Timers"
  - remove "103.3.5.5 Messages" - no changes from EPON, and "103.3.5.6 State diagrams" = again, no changes from EPON.

**Proposed Response**

PROPOSED ACCEPT IN PRINCIPLE.

While I generally like the idea it would create problem in this instance as there are several differences.
- minGrantLength vs minGrantLengthC
- BurstOverhead(77) vs BurstTimeHeader()(103, includes BurstTimeHeader()).

Remove tqSizeC pg 331 in 38
Rename BurstTimeHeader() to BurstTimeHeaderC(), add to table 103-1
IEEE 802.3bn EPON Protocol over Coax (EPoC) TF Initial Working Group ballot comments

Proposed Responses

Comment ID 3775

Comment Type E Comment Status D

These parameters are based on the following conditions:" - likely, "These parameters are >>based<< on the following conditions:" 

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE. See comment #3778

Comment ID 3776

Comment Type TR Comment Status D

Figure 100A-1 does not make much sense - it focuses on the application og CLT fed via OLT, which is outside of the scope of EPoC.

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE. Remove EPON OLT and connection from EPON OLT - CLT may be shown as fed from headend or located within the headend - it does not matter as far as EPoC architecture is concerned.

Comment ID 3777

Comment Type TR Comment Status D

The upper part of Figure 100A-1 does not show CNU location - it is not clear what this is intended to demonstrate and how it related with normative EPoC channel parameters.

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE. Remove the upper part of Figure 100A-1. In the bottom part, demonstrate a connection from CLT, via optional amp, into a tap connected to a 2-way splitter and then EPoC CNU. Demark is not defined in any way, form, or fashion in EPoC and it is meaningless to demonstrate it in the figure.

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE. Add a dotted line between and upper TAP and the lower TAP to indicate it is a connected tree and branch network. Showing an example of the CLT connecting after an HFC node is important. Remove Demark and box from the figure.

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE. With these changes also need to show HFC operation with respect to placement of individual CLT attachment locations after an HFC node. Consider showing "optical to electrical" and "electrical to optical" conversion functions, as appropriate.

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE. With these changes also need to show HFC operation with respect to placement of individual CLT attachment locations after an HFC node. Consider showing "optical to electrical" and "electrical to optical" conversion functions, as appropriate.

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE. Page 252 is incorrect, assuming page 352. Line 6, "base" should be "based" Otherwise, Table 100A-1 is based on the required system setup as described in Lines 6 through 13 and removal of the list would remove the setup conditions and would be inappropriate for the model and establishment of baseline channel conditions. Same with the following subclause.

Comment ID 3778

Page 39 of 124

TYPE: TR/technical required ER/editorial required GR/general required T/technical E/editorial G/general
COMMENT STATUS: D/dispatched A/accepted R/rejected RESPONSE STATUS: O/open W/written C/closed U/unsatisfied Z/withdrawn
SORT ORDER: Comment ID

9/8/2015 6:20:54 PM
There are numerous issues with Table 100A-1, mainly in terms of missing definitions and impact on CCDN definition required for EPoC:

- Frequency range: is this the intended minimum frequency range for cabling supporting EPoC? If not, what is it then?
- What is "OFDM Bandwidth"? It is used in table as normative, yet it seems that it is the EPoC ODFM band but defined using a different term. Rationalize with the rest of the draft
- What is CPE in "OFDM Power at CPE Input"? It seems that it is the power level at input to CNU?
- "BW" is used quite liberally as a short form for "bandwidth", yet it is not defined anywhere really
- Given that the minimum ODFM band for EPoC is 192 MHz, what is the point of defining ODFM power levels for 6, 24, 96 MHz????
- "Signal-to-noise ratio" entry has "Signal to Composite Noise Ratio" used - which is it then?? Again, not clear why SCN is defined for 6, 24, 96 MHz when minimum ODFM band for EPoC is 192 MHz
- CTB/CSO interference is NOT defined, yet used as a normative parameter
- Many other terms that are not defined anywhere: Narrowband Interference (Other), Wideband Interference, Impulse (white) Noise, Amplitude Slope, Amplitude Variation, etc. - these are all new terms in 802.3 in the context of CCDN and need references for definition or a local definition, whichever is appropriate.
- Many of the notes to parameters in the table are meaningless, e.g. "Measured at 700 to 800 MHz, representative of 99% of modems" - what are "modems"? "SCTE Definition, Echo not included" - where is the reference to said SCTE definition? "Small drop slope effect on calculation" - what does it even mean???? "Worst spectrum regions for CTB and CSO are not the same" - why does it matter, given that CTB/CSO spectrum is not demonstrated at all

Suggested Remedy

Per comment for Table 100A-1 and Table 100A-2

The only thing we should be specifying in EPoC is: PMD operation (transmit and receive requirements, immunity to noise, impairments, etc.) and type of cable plant on which EPoC is guaranteed to operate. Content of Table 100A-1 and Table 100A-2 is unclear and seems to cover more of conditions for coexisting services on the same CCDN rather than EPoC plant definition.

Proposed Response

Response Status W

PROPOSED REJECT.

Appendix 100A specifies the normative channel model that was adopted in order to support the error performance studies, etc. and to establish operation under our baseline channel conditions operating on a CCDN with other cable operator services for support of "PMD operation (transmit and receive requirements, immunity to noise, impairments, etc.) and type of cable plant on which EPoC is guaranteed to operate". This includes the ingress and egress noise products and impairments from coexisting services and other sources. In terms of satisfying objectives, this model is required for "Defined required plant configurations and conditions within an overall coaxial network operating model", "PHY to operate in the cable spectrum assigned for its operation without causing harmful interference to any signals or services carried in the remainder of the cable spectrum." as well as some other performance related objectives.

The Task Force may wish to change this to an accept in principle and consider the following or additional updates:

Page 352.
Line 22: update frequency range to that in Table 100-3?
Line 23: "OFDM bandwidth" change to "OFDM encompassed spectrum"
Line 27: consider expanding "BW" to "bandwidth" or indicate in some other manner. This includes Table 100A-2.
Line 28: consider separately removing rows for "6 MHz" and "24 MHz"
Line 34-42: consider removing rows for "24 MHz" and changing "Group Delay Variation" to "Group delay variation over 192 MHz". Apply same decision respectively to Table 100A-2, if needed or treat Table 100A-2 differently.
Page 354.
Line 14: Expand on definition of "small drop slope effect"
Line 28: change "modems" to "CNUs".

Page 355.
Line 7: update frequency range to match Table 100-11?
Line 42-44: are the 24 MHz and 96 MHz rows necessary for this model and/or EPoC upstream at this point? If not, remove.

Entire table 100A-1 and 100A-2, capitalize only the first word in Parameter column.
Proposed Responses

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Comment ID 3786

Proposed Responses for Comment ID 3786

- **Comment ID 3781**
  - **Comment Type**: E
  - **Comment Status**: D
  - **Proposed Response**: "The resulting FP bits" should be "The resulting F>>P<< bits", where >>p<< is in subscript to match the following text / figures.
  - **Suggested Remedy**: PROPOSED ACCEPT.

- **Comment ID 3782**
  - **Comment Type**: E
  - **Comment Status**: D
  - **Proposed Response**: There are two instances in Figure 101-7 of "65 bit block" which should be "65-bit block" - "65 bit" is an adjective in here.
  - **Suggested Remedy**: Per comment.
  - **Proposed Response**: PROPOSED ACCEPT.

- **Comment ID 3783**
  - **Comment Type**: E
  - **Comment Status**: D
  - **Proposed Response**: "associate US Filling Threshold FT" - "associate" or "associated" ???
  - **Suggested Remedy**: I think adjective here ("associated") is correct. "Associate" (noun / verb) is not.
  - **Proposed Response**: PROPOSED ACCEPT IN PRINCIPLE. See Comment ID 3811

- **Comment ID 3784**
  - **Comment Type**: E
  - **Comment Status**: D
  - **Proposed Response**: Inconsistent state naming policy. I believe most states use all caps with "_" between individual compound words.
  - **Suggested Remedy**: Change "WAIT FOR CALL" to "WAIT_FOR_CALL". Make sure all states in all state diagrams in this draft follow the same naming logic.
  - **Proposed Response**: PROPOSED ACCEPT.

- **Comment ID 3785**
  - **Comment Type**: E
  - **Comment Status**: D
  - **Proposed Response**: Center alignment of Register / bit number column looks just odd - bit numbers are not of the same length and current pattern is just hard to read.
  - **Suggested Remedy**: Suggest to right align information in this column. The same for Index and Bit(s) columns, please.
  - **Proposed Response**: PROPOSED ACCEPT IN PRINCIPLE. Changed to Comment ID 45 Xref Tables.

- **Comment ID 3786**
  - **Comment Type**: E
  - **Comment Status**: D
  - **Proposed Response**: The first reference to Figure 101-1 is on page 133, line 12, yet figure is on page 132.
  - **Suggested Remedy**: Move figure 101-1 to a location after 101.2.1, where it is first called out.
  - **Proposed Response**: PROPOSED ACCEPT.
Proposed Response

Cl 101 SC 101.3.2.5.6 P 151 L 8 # 3787
Hajduczenia, Marek Bright House Networks

Comment Type E Comment Status D EZ
Variable formatting (for umth time): "left-most bit is tx_coded_out<0> and the right-most bit is tx_coded_out<FC-1>.

SuggestedRemedy
Be consistent with the way variable names are italicized!

Proposed Response Response Status W
PROPOSED ACCEPT IN PRINCIPLE.
See Cmt# 3793

Cl 101 SC 101.3.2.5.7 P 151 L 21 # 3788
Hajduczenia, Marek Bright House Networks

Comment Type E Comment Status D EZ
Inconsistent formatting for hex number: 0x D8 58 E4 AB

SuggestedRemedy
change "0x D8 58 E4 AB" to "0xD858E4AB" or "0xD8-58-E4-AB" if you want to separate out individual 8 bit values.

Proposed Response Response Status W
PROPOSED ACCEPT IN PRINCIPLE.
"0xD858E4AB"

Cl 101 SC 101.3.2.5.7 P 153 L 28 # 3789
Hajduczenia, Marek Bright House Networks

Comment Type E Comment Status D EZ
Dead references: "Figure 100-3 and 100.2.9.7"

SuggestedRemedy
Per comment

Proposed Response Response Status W
PROPOSED ACCEPT.
IEEE 802.3bn EPON Protocol over Coax (EPoC) TF Initial Working Group ballot comments

Proposed Responses

Draft 2.0

Proposed Response

### #3792

**Cl 101 SC 101.3.2.4**

Hajduczenia, Marek  
Bright House Networks

**Comment Type** ER  
**Comment Status** D

**Comment**

"LDPC (16200, 14400)" gets broken across lines of text.

**Suggested Remedy**

Either a) manually fix each reference to LDPC in text and make sure it does not get broken across lines of text, or b) use "LDPC(16200,14400)" (note no spaces) which will be treated as a single word and not broken across line.

Approach b) is recommended.

**Proposed Response**

**Response Status** W

PROPOSED ACCEPT IN PRINCIPLE.

- Change (29x) "LDPC (" to "LDPC("
- and change (8x) "16200, 14400" tp "16200,14400"
- and change (4x) "1120, 840" to "1120,840"
- and change (2x) "5940, 5040" to "5940,5040"

---

### #3793

**Cl 101 SC 101.3.2.5.4**

Hajduczenia, Marek  
Bright House Networks

**Comment Type** ER  
**Comment Status** D

**Comment**

In many locations in Clause 100, 103, and 102, variables are itialicized for better readability. Clause 101 is kind of in between, with some variables italicized and some not.

**Suggested Remedy**

Consider italicizing variable names for better readability - applicable to the whole draft!

**Proposed Response**

**Response Status** W

PROPOSED ACCEPT IN PRINCIPLE.

Italicized and variable names not noticed as such.

---

### #3794

**Cl 101 SC 101.3.2.5.6**

Hajduczenia, Marek  
Bright House Networks

**Comment Type** ER  
**Comment Status** D

**Comment**

"IdleBlockCount" does not seem to follow prevailing variable naming scheme

**Suggested Remedy**

Rename to "idleBlockCount"

It would be also valuable to organize locally defined (specific to EPoC) variable names across the whole draft so they use the same capitalization (naming) scheme. It seems that wordWordWordWord scheme is prevailing right now.

Examples of variable name changes in 101.3.2.5.6 include:
- Short2Payload => short2Payload
- Short2blockCount => short2BlockCount
- IdleBlockCount => idleBlockCount
- tx_coded => txCoded
- tx_coded_out => txCodedOut
- US_DataRate => usDataRate
- BurstTimeHeader => burstTimeHeader
- Calculate_CRC40_and_3Parity => calcCrc40 (does not seem that the function name needs to be longer than that) etc.

I do realize it will take some work, but it simplifies reading variable names, and distinguishing them from surrounding text. Note that single word variables like "loc", "transmitting" should be avoided:
- transmitting => txInProgress
- loc => locInArray

are more descriptive and easy to distinguish from surrounding text

**Proposed Response**

**Response Status** W

PROPOSED REJECT.

This proposal to somehow normalize the variable naming across the draft was considered and rejected already by the TF. However we can vote on it to ensure the will of the TF has not changed.

Passed by voice without opposition
For (reject):
Against (change variable name):
Abstain:
### Proposed Responses

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Proposed Responses

**Comment ID 3799**

**Comment Type** T

**Comment Status** D

remein_22

Hajduczenia, Marek

Bright House Networks

**Proposed Response**

**Response Status** W

**Proposed Accept in Principle.**

Change "PHY_OSize is determined by" to "The value of PHY_OSize is calculated based on Equation (101-2)." - make sure the link is live.

**Suggested Remedy**

Similar change needed in PHY_OSizeFrac variable (page 136, line 38/39, to tie it to what should be equation 101-3 (lines 41-44, page 136).

**Comment ID 3800**

**Comment Type** T

**Comment Status** D

remein_22

Hajduczenia, Marek

Bright House Networks

**Proposed Response**

**Response Status** W

**Proposed Rejected.**

**Suggested Remedy**

"accResidue <= 0" to "accResidue <= 0.0"

**Comment ID 3801**

**Comment Type** T

**Comment Status** D

remein_22

Hajduczenia, Marek

Bright House Networks

**Proposed Response**

**Response Status** W

**Proposed Accept.**

This change is included in remein_3bn_22_0915.

**Comment ID 3802**

**Comment Type** T

**Comment Status** D

Hajduczenia, Marek

Bright House Networks

**Proposed Response**

**Response Status** W

**Proposed Reject.**

CI 76.3.2.2 does not take exception to the CL 49 scrambler function as is done in EPoC.

**Comment ID 3803**

**Comment Type** T

**Comment Status** D

Hajduczenia, Marek

Bright House Networks

**Proposed Response**

**Response Status** W

**Proposed Accept in Principle.**

"initialized to the value 0x00" - given that the register is 40 bits long, 0x00 covers only 8 bits of 40 bits in this register. What happens with the remaining 32 bits?

**Suggested Remedy**

"initialized to the value 0x00" to "initialized to the value 0x0000000000", which represents a 40-bit all 0s value in hex.

**Comment ID 3804**

**Comment Type** T

**Comment Status** D

Hajduczenia, Marek

Bright House Networks

**Proposed Response**

**Response Status** W

**Proposed Accept in Principle.**

"Change to "value zero", which is the same regardless of the number base."
The length of the FIFO_FEC_TX buffer is selected in such a way that it is large enough to compensate for the insertion of the FEC parity data and CRC40, as defined in 101.3.2.5.2.

Two issues here:
1) 101.3.2.5.2 does not define anything related with CRC40
2) statements in 101.3.2.1 speak about FEC overhead compensation sub-process and data rate adaptation sub-process, implying that there is FEC overhead and PHY overhead - the same language should be used in here as well

Suggested Remedy
Change to read "The length of the FIFO_FEC_TX buffer is selected in such a way that it is large enough to compensate for the FEC overhead and PHY overhead, as discussed in 101.3.2.1." - make link live

PROPOSED ACCEPT.

---

The statement in lines 1-7, including the formula, should be included in the definition of the FIFO_FEC_TX size, and not just in text.

Suggested Remedy
Remove the indicated lines on page 145.

Update the definition of FIFO_FEC_TX in 101.3.2.5.6 by adding the following statement to the end of definition: "The size of FIFO_FEC_TX buffer in the 10GPASS-XR CLT PCS is set to 29 = ceil {(1800+40)/65}."

If the statement on CLT buffer size is added, the CNU buffer size should be also calculated, as the worst case scenario (minimum packet sizes, shortest code word + CRC40)

PROPOSED ACCEPT IN PRINCIPLE.

---

Figure 101–7 has a block indicating "First codeword starts with two 65 bit blocks containing Idle" but pointing to before the first FEC codeword.

Suggested Remedy
First, change "First codeword" to "First FEC codeword" if that is what is intended.
Second, move the arrow for this block from where it is right now, to the first rectangle within the first FEC codeword - right now it is pointing to something outside of the FEC codeword and does not match the text.

PROPOSED ACCEPT IN PRINCIPLE.

---

The values "(14400 - 60 = 14340 bits)" are just examples for one specific LDPC codeword size, and not universally applicable.

Suggested Remedy
Change "(14400 - 60 = 14340 bits)" to "(e.g., 14400 - 60 = 14340 bits)". The same change on page 145, line 33 where another specific numeric example is given.

PROPOSED ACCEPT IN PRINCIPLE.

Per comment, note that on line these is an "i.e.," that should be removed.

---

First codeword starts with two 65 bit blocks containing Idle" but pointing to before the first FEC codeword.

Suggested Remedy
First, change "First codeword" to "First FEC codeword" if that is what is intended.
Second, move the arrow for this block from where it is right now, to the first rectangle within the first FEC codeword - right now it is pointing to something outside of the FEC codeword and does not match the text.

PROPOSED ACCEPT IN PRINCIPLE.

---

The length of the FIFO_FEC_TX buffer is selected in such a way that it is large enough to compensate for the insertion of the FEC parity data and CRC40, as defined in 101.3.2.5.2.

Two issues here:
1) 101.3.2.5.2 does not define anything related with CRC40
2) statements in 101.3.2.1 speak about FEC overhead compensation sub-process and data rate adaptation sub-process, implying that there is FEC overhead and PHY overhead - the same language should be used in here as well

Suggested Remedy
Change all instances of "LDPC-encoder" to "LDPC Encoder", including figures

PROPOSED ACCEPT IN PRINCIPLE.

Replace the 2 instances found on pg 145 ln 30 and 31.
<table>
<thead>
<tr>
<th>Comment ID</th>
<th>SC</th>
<th>P</th>
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<th>Proposed Responses</th>
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<tbody>
<tr>
<td>3809</td>
<td>101.3.2.5.2</td>
<td>147</td>
<td>38</td>
<td>2</td>
<td><strong>Proposed Response</strong>&lt;br&gt;<strong>Comment</strong>&lt;br&gt;Figure 101-7 uses two terms to mean the same: MAC data, and data.&lt;br&gt;<strong>Proposed Remedy</strong>&lt;br&gt;I believe &quot;data&quot; is used more predominantly. Change &quot;MAC Data&quot; to &quot;data&quot;&lt;br&gt;<strong>Proposed Response</strong>&lt;br&gt;PROPOSED REJECT.&lt;br&gt;In EPoC we have two types of data: MAC and PHY Link. The clarification is needed in this instance. This also is consistent with Fig 76-14.</td>
</tr>
<tr>
<td>3810</td>
<td>101.3.2.5.2</td>
<td>146</td>
<td>47</td>
<td>2</td>
<td><strong>Proposed Response</strong>&lt;br&gt;<strong>Comment</strong>&lt;br&gt;&quot;each FEC codeword (FEC CW)&quot; - this is an odd place to add an acronym, which is used only within Figure 101-7.&lt;br&gt;<strong>Proposed Remedy</strong>&lt;br&gt;Remove &quot;(FEC CW)&quot; statement. In Figure 101-7, change &quot;FEC CW1&quot; to &quot;FEC&lt;\n&gt;codeword 1&quot; (&lt;\n&gt; = newline) and do the same change for &quot;FEC CW2&quot; - there is plenty of space to use.</td>
</tr>
<tr>
<td>3811</td>
<td>101.3.2.5.4</td>
<td>148</td>
<td>10</td>
<td>2</td>
<td><strong>Proposed Response</strong>&lt;br&gt;<strong>Comment</strong>&lt;br&gt;What does it mean: &quot;Each codeword size has an associate US Filling Threshold FT with a specific threshold for each codeword size.&quot; - it seems like a circular definition at this time.&lt;br&gt;<strong>Proposed Remedy</strong>&lt;br&gt;Seems that &quot;Each codeword size has a specific, associated US Filling Threshold FT.&quot; would be sufficient&lt;br&gt;<strong>Proposed Response</strong>&lt;br&gt;PROPOSED ACCEPT.</td>
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<tr>
<td>3812</td>
<td>101.3.2.5.4</td>
<td>148</td>
<td>12</td>
<td>2</td>
<td><strong>Proposed Response</strong>&lt;br&gt;<strong>Comment</strong>&lt;br&gt;The upstream burst filling process is described as follows:&lt;br&gt;START: Add burst start marker. Move to STEP 1.&lt;br&gt;STEP 1: If the number of available 65-bit blocks (Bin) is sufficient to fill a long FEC codeword (BG &gt;= 220), create a long FEC codeword. Repeat STEP 1 as long as Bin &gt;= 220; otherwise move to STEP 2.&lt;br&gt;STEP 2: If 220 &gt; Bin &gt;= 101, create a shortened long FEC codeword and move to END; otherwise move to STEP 3.&lt;br&gt;STEP 3: If 101 &gt; Bin &gt;= 76, create a medium FEC codeword. Move to STEP 4.&lt;br&gt;STEP 4: If 76 &gt; Bin &gt;= 25, create a shortened medium FEC codeword and move to END; otherwise move to STEP 5.&lt;br&gt;STEP 5: If 25 &gt; Bin &gt;= 12, create a short FEC codeword. Move to STEP 6.&lt;br&gt;STEP 6: If 12 &gt; Bin &gt;= 1, create a shortened short FEC codeword and move to END.&lt;br&gt;END: Add burst end marker. use appropriate formatting, as needed&lt;br&gt;<strong>Proposed Response</strong>&lt;br&gt;PROPOSED REJECT.&lt;br&gt;I fail to see how replacing &quot;B&quot; with &quot;Bin&quot; is any more clear than the text in the draft. The construct &quot;START ... STEP # ... END&quot; is not in the standard to my knowledge. The text here is merely an informative description of the normative definition of Check_dataPayload( firstcodeword, lastcodeword ) Pg 152 ln 18.</td>
</tr>
<tr>
<td>3813</td>
<td>101.3.2.5.4</td>
<td>148</td>
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<td>2</td>
<td><strong>Proposed Response</strong>&lt;br&gt;<strong>Comment</strong>&lt;br&gt;The description in lines 28-37 is another representation of the process described above on the same page and it is not needed - not referenced anywhere else in the draft.&lt;br&gt;<strong>Proposed Remedy</strong>&lt;br&gt;Remove lines 28-37&lt;br&gt;<strong>Proposed Response</strong>&lt;br&gt;PROPOSED ACCEPT.</td>
</tr>
<tr>
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<td>Page</td>
<td>Line</td>
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<td>31</td>
<td>PROPOSED ACCEPT.</td>
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</table>
Proposed Responses

### Comment 3819

**Comment Type:** TR  
**Comment Status:** D

Hajduczenia, Marek  
Bright House Networks

**Proposed Response**  
**Response Status:** W

The value of Bp and Bq are selected based on Table 101-2, but it is not clear how the selection is done.

- **Suggested Remedy:**
  - Clarify how proper values (long / medium / short) are selected for Bp and Bq, if they are at all needed. FI cannot find Bp and Bq used in state diagrams at all - why are they defined then? Remove them :)

PROPOSED REJECT.

Both BP (appears 19x) and BQ (appears 54x) are used extensively in the draft and cannot be removed. Selection in the US is clearly described in 101.3.2.5.4 (see pg 148 line 34).

Passed by voice without opposition

For (reject):

Against (change variable name):

Abstain:

---

### Comment 3820

**Comment Type:** TR  
**Comment Status:** D

Hajduczenia, Marek  
Bright House Networks

**Proposed Response**  
**Response Status:** W

burstEnd and burstStart are defined as variables and even set to some values (TRUE / FALSE) in Figure 101–11, but it is not shown what specific values are encoded and in what way when burst start marker and burst end marker are placed on wire

- **Suggested Remedy:**
  - Text on page 153, lines 20-29 seems to imply these are NOT markers at all, but only signals to drive PMA to shut transmitter ON / OFF, and nothing more - the names are then confusing.

Rather than generate additional variables, state diagram in Figure 101–11 should generate explicitly PMD_SIGNAL.request(tx_enable <= FALSE) when end of burst is detected and PMD_SIGNAL.request(tx_enable <= TRUE) when start of burst is detected. This avoid the need for additional variables in already complex state diagrams.

PROPOSED ACCEPT IN PRINCIPLE.

See comment 3831

---

### Comment 3821

**Comment Type:** TR  
**Comment Status:** D

Hajduczenia, Marek  
Bright House Networks

**Proposed Response**  
**Response Status:** W

Really odd instructions in INIT block in Figure 101–11

- **Suggested Remedy:**
  - input ARRAY_IN
  - Input burstSize
  - Input lastcodeword

PROPOSED ACCEPT IN PRINCIPLE.

See Cmt 3831

---

### Comment 3822

**Comment Type:** TR  
**Comment Status:** D

Hajduczenia, Marek  
Bright House Networks

**Proposed Response**  
**Response Status:** W

Variable burstSize is defined in 101.3.2.5.6, and used as parameter in transferToPMA function call, but the way it is used in Figure 101–11, it is never set to any specific value, but then used in comparing conditions for exit from PMA_CLIENT state.

- **Suggested Remedy:**
  - Update Figure 101–11 to set burstSize to some value and update it as the burst size increments. Otherwise, the operation is broken sicne burst size is never calculated ! it seems that definition of burstSize could be changed to "This variable represents the size of ARRAY_IN array," or alternatively, remove it altogether and use sizeof(ARRAY_IN) instead to figure out how many bits are located in ARRAY_IN

PROPOSED ACCEPT IN PRINCIPLE.

In Fig 101-9 in CALCULATE_CRC40_AND_PARITY before transferToPMA(tx_coded_out, (blockCount*65) + 40 + FC, TRUE)  
Add line "burstSize = (blockCount*65) + 40 + FC"

Pg 151 lin 49/50 change  
"loc += parityLength;
transferToPMA(tx_coded_out, loc, lastcodeword);
" to  
"burstSize += parityLength;
transferToPMA(tx_coded_out, burstSize, lastcodeword);"
IEEE 802.3bn EPON Protocol over Coax (EPoC) TF Initial Working Group ballot comments

**Proposed Responses**

**Comment ID** 3823

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<thead>
<tr>
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<th>SC</th>
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<th>L 32</th>
<th>#</th>
<th>Proposed Responses</th>
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<td>Bright House Networks</td>
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<td>Comment Type</td>
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<td>Comment Status</td>
<td>D</td>
<td>Fig 101-9, Fig 101-10</td>
<td></td>
</tr>
<tr>
<td>CLT output process seems to disable the transmitter at the end of each FEC codeword, by setting the last parameter to TRUE:</td>
<td></td>
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</tr>
<tr>
<td>transferToPMA(tx_coded_out, (blockCount*65) + 40 + FC, TRUE)</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>but there is no location where transmitter is enabled explicitly, and definition of transferToPMA does not clarify when Tx is enabled for CLT.</td>
<td></td>
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<tr>
<td><strong>Suggested Remedy</strong></td>
<td></td>
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</tr>
<tr>
<td>Either add explicit Tx enable in one of states, OR extend the definition of transferToPMA function to enable explicit Tx enable on the first transferred bit, OR do not disable Tx in CLT at all (not really needed, is it?)</td>
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</tr>
<tr>
<td><strong>Proposed Response</strong> Response Status W</td>
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</tr>
<tr>
<td>PROPOSED ACCEPT IN PRINCIPLE.</td>
<td></td>
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</tr>
<tr>
<td>Add &quot;The setting of last codeword has no effect in the CLT.&quot; to the Def of transferToPMA definition on pg 153 in 19.</td>
<td></td>
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</tr>
</tbody>
</table>
| In Fig 101-10 add *
| "PMA_SIGNAL.request( ON )" to START_BURST |
| "PMA_SIGNAL.request( OFF )" to END_BURST |
| See remein_3bn_21_0915 |

**Comment ID** 3824

<table>
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<tr>
<th>CI</th>
<th>SC</th>
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<th>L 22</th>
<th>#</th>
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<td>Hajduczenia, Marek</td>
<td>Bright House Networks</td>
<td></td>
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<tr>
<td>Comment Type</td>
<td>TR</td>
<td>Comment Status</td>
<td>D</td>
<td>Fig 101-10</td>
<td></td>
</tr>
<tr>
<td>Transition between START_BURST and AGGREGATE_BQ_BLOCK is never taken. Note that in state NO_BURST_IN_PROGRESS, first codeword is set to TRUE, and then not modified in START_BURST, so it is always TRUE the moment state START_BURST is left.</td>
<td></td>
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</tr>
<tr>
<td><strong>Suggested Remedy</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Either a) remove transition on &quot;first codeword = FALSE&quot; between START_BURST and AGGREGATE_BQ_BLOCK, or b) fix the state diagram so that this transition can be taken (not clear under what conditions it would need to be taken, really).</td>
<td></td>
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<tr>
<td><strong>Proposed Response</strong> Response Status W</td>
<td></td>
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<td>PROPOSED ACCEPT IN PRINCIPLE.</td>
<td></td>
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<tr>
<td>Add statement in AGGREGATE_BURST_TIME_HEADER</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>&quot;first codeword &lt;= FALSE&quot;</td>
<td></td>
<td></td>
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<td></td>
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</tr>
</tbody>
</table>
The operation of AGGREGATE_BQ_BLOCK state is not correct. Right now, the state machine will loop in AGGREGATE_BQ_BLOCK state until DelayBound is reached, but that does not guarantee aggregation of BQ blocks of data.

Suggested Remedy

The ONU state diagram is broken from AGGREGATE_BQ_BLOCK state onwards.

Probably the name of AGGREGATE_BQ_BLOCK state is confusing, in that it does not really aggregate any blocks. Note that in each clock, we get one more 65-bit block, execute Check_dataPayload function which calculates CRC40 for selected codeword, and then go back for next 65-bit block.

The operation in here should be different, i.e., we aggregate data blocks until either of the conditions becomes true: we observe end of burst in data detector OR we aggregate enough data for logn codeword. In that case, CRC40, parity needs to be calculated and we go back to aggregation process (if data detector does not signal end of burst) or move to end of burst (when data detector signals end of burst).

note that burst end marker should be transmitter in END_BURST state and not in aggregation state - this would be a cleaner solution to what is currently done.

Proposed Response

PROPOSED ACCEPT IN PRINCIPLE.

Change name for state to:
"AGGREGATE_BLOCKS"

Note that Check_dataPayload accounts for other functions mentioned in Suggested Remedy.

...
Description of Calculate_CRC40_and_3Parity(paritySize) using pseudocode contains a few issues, as listed below:

- additional description in lines 28 and 29 is a repetition of text in lines 23-25 and it is not needed (remove)
- definition of global variables is unnecessary (lines 33-34) - these have meaning in Matlab and but not within this draft - remove
- given that it is pseudocode, ";" at the end of each line is not needed (that is Java / Matlab / C / C++ specific)
- "+=" is used as assignment operator AND as comparison operator (equals to)
- "return()" statement is meaningless - all operations are done on variables and other functions are called - there is nothing to "return"
- "block_count" is not used in the function in any way - it should be reset to 0 explicitly in state diagram
- keyword "function" is not needed - this is not Matlab script

Suggested Remedy

Use the following definition of this function:

```c
Calculate_CRC40_and_3Parity(paritySize) {
  if (paritySize == LONG) parityLength = 1800
  else if (paritySize == MEDIUM) parityLength = 900
  else parityLength = 280
  dataPayload<loc+39:loc> = calculateCrc(dataPayload<loc-1:0>)
  tx_coded_out<loc+39:loc> = dataPayload<loc+39:loc>
  loc += 40
  dataParity<parityLength-1:0> = calculateParity(dataPayload<loc-1:0>, loc, paritySize)
  tx_coded_out<loc+parityLength-1:loc> = dataParity<parityLength-1:0>
  loc += parityLength
  transferToPMA(tx_coded_out, loc, lastcodeword)
  firstcodeword = FALSE
  loc = 0
  resetArray(dataPayload)
  resetArray(dataParity)
}
```

PROPOSED ACCEPT IN PRINCIPLE.

- no change to "+=" it is pseudocode and in some languages this is acceptable
- remove keyword "function" it is pseudocode

Passed by voice without opposition

For (reject):
- Against (change variable name):
- Abstain:
<table>
<thead>
<tr>
<th>Comment ID</th>
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<th>L</th>
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<td>19</td>
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<td>Bright House Networks</td>
<td>transferToPMA function needs more detailed definition - current description is very hard to process, especially that it calls some &quot;Transfer to PMA process&quot; that is not formally defined anywhere. I would assume that all it does is play out content of ARRAY_IN across PMA service interface (in other words, pick bit zero from ARRAY_IN, push it across PMA_UNITDATA.request(), remove head in ARRAY_IN, and repeat until there is data; when lastcodeword is TRUE, send PMD_SIGNAL.request(tx_enable &lt;= FALSE)</td>
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<td>TR</td>
<td>Dispatched</td>
<td>3831</td>
<td>Marek Hajduczenia</td>
<td>Bright House Networks</td>
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<td>53682</td>
<td>Hajduczenia, Marek</td>
<td>Bright House Networks</td>
<td>Wrong value assigned to IdleBlockCount variable. It is defined as 32 bit unsigned int and it is assigned the value of -1 (effectively, 0xFFFFFFF)</td>
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<td>TR</td>
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<td>3832</td>
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Proposed Responses

CI  101  SC 101.3.2.5.8  P 150  L 45  # 3834
Hajduczenia, Marek  Bright House Networks

Comment Type  TR  Comment Status  D

Definition of sizeFifo does not match the use in Figure 101–8 - it is used as size of FIFO_FEC_TX

Suggested Remedy
Change definition of sizeFifo to read: "This variable represents the number of 65-bit blocks stored in the FIFO_FEC_TX."
Note that breaks also removeFifoHead definition, which is really tied to FIFO_FEC_TX array only and not some generic ARRAY_IN
To make removeFifoHead more generic, it should be redefined as

removeFifoHead( ARRAY_IN, sizeFifo )

and any calls done like this: removeFifoHead( Array, sizeof(Array) )

Proposed Response  Response Status  W
PROPOSED ACCEPT IN PRINCIPLE.
In Figure 101-14 change "sizeFifo" to "sizeFifoRX" (3x)
Pg 154 in 22 Figure 101-8
remove "FIFO_FEC_TX" from "RemoveFifoHead(FIFO_FEC_TX)" in RECEIVE_FIFE_HEAD as in Cl 76 Figure 76-16.
Also change "[" to "]" at line 26
Pg 162 change definiton fo "sizeFifo" to "sizeFifoRX"
TYPE: 16-bit unsigned integer
This variable represents the number of 65-bit blocks stored in the FIFO."

CI  101  SC 101.3.1  P 134  L 39  # 3836
Hajduczenia, Marek  Bright House Networks

Comment Type  E  Comment Status  D

This does not read right: "Figure 100–4 and Figure 100–5 illustrate the functional block diagram of the receive path in the CLT and CNU, respectively in the EPoC PCS."

Suggested Remedy
Change to "Figure 100–4 and Figure 100–5 illustrate the functional block diagram of the receive path in the CLT PCS and CNU PCS, respectively."

Proposed Response  Response Status  W
PROPOSED ACCEPT.

CI  101  SC 101.3.2.1.2  P 136  L 42  # 3837
Hajduczenia, Marek  Bright House Networks

Comment Type  E  Comment Status  D

Inconsistent text format in equation: "PHY_DSSize" is partially italicized - should be itialized as a whole

Suggested Remedy
Same issue in Equation 101-2 and Equation 101-1 for PCS_Rate

Proposed Response  Response Status  W
PROPOSED ACCEPT.

This change is included in remein_3bn_22_0915

CI  00  SC 101.3.2.1.5  P 138  L 19  # 3838
Hajduczenia, Marek  Bright House Networks

Comment Type  E  Comment Status  D

”The Idle control character insertion and deletion mechanism accommodates” - these are independent mechanisms>>s<<

Suggested Remedy
Change to "The Idle control character insertion and deletion mechanisms accommodate"

Proposed Response  Response Status  W
PROPOSED ACCEPT.
IEEE 802.3bn EPON Protocol over Coax (EPoC) TF Initial Working Group ballot comments

Proposed Responses

---

**Comment ID** 3839

**Proposed Response**

- **Comment Type**: E
- **Comment Status**: D

Hajduczenia, Marek
Bright House Networks

"ELSE" or "Else" or "else" - three forms are used in this draft - pick one and use consistently ...

**Suggested Remedy**

Per comment

**PROPOSED ACCEPT IN PRINCIPLE.**

use "else" in all cases.

---

**Comment ID** 3840

**Proposed Response**

- **Comment Type**: E
- **Comment Status**: D

Hajduczenia, Marek
Bright House Networks

Line break control for " 64B/66B Encoder"

**Suggested Remedy**

Please make sure that Frame does not break across "/" character

**PROPOSED ACCEPT IN PRINCIPLE.**

Changed to Cl 00 as impact to all clauses

Remove "/" from characters in the Allow Line Breaks After by following the procedure below

Choose Format > Document > Text Options

remove "/" from list.

---

**Comment ID** 3841

**Proposed Response**

- **Comment Type**: T
- **Comment Status**: D

Hajduczenia, Marek
Bright House Networks

It is not clear what the purpose of assigning Burst_Time_Header() to dataPayload<loc+64:0>
and then assigning dataPayload<loc+64:0> to tx_coded_out<64:0> is. I suggest assigning
Burst_Time_Header() to tx_coded_out<64:0> directly and saving one operation, which is
meaningless anyway :)

**Suggested Remedy**

Change

\[
data\text{Payload}<\text{loc+64}:0> = \text{Burst\_Time\_Header}() \\
tx\_\text{coded\_out}<64:0> = data\text{Payload}<\text{loc+64}:0>
\]

to

\[
tx\_\text{coded\_out}<64:0> <= \text{Burst\_Time\_Header}()
\]

**PROPOSED ACCEPT IN PRINCIPLE.**

Per comment and:

convert to native FramMaker format,
Add UTC exit condition to AAGGREGATE_BURST_TIME_HEADER and END_BURST states

See remain_3bn_21_0915

---

**Comment ID** 3842

**Proposed Response**

- **Comment Type**: T
- **Comment Status**: D

Hajduczenia, Marek
Bright House Networks

"with exceptions noted herein" - i.e., where?

**Suggested Remedy**

change to "with exceptions noted in XXX" and add reference where said exceptions are listed
(likely candidate: 101.2.3)

**PROPOSED REJECT.**

Actually the herein would be 101.2 but then that would form a circular reference. Imho the
meaning is clear, we can change to something else if the TF agrees with you.
<table>
<thead>
<tr>
<th>CI</th>
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<td>3847</td>
</tr>
</tbody>
</table>

**Comment Type** | **Comment Status** | **Proposed Response**
---|---|---
T | D | **Proposed Responses**

**Comment**

"point-to-multipoint coaxial medium architecture" - I believe this is the definition of CCDN???

**Suggested Remedy**

replace "over the point-to-multipoint coaxial medium architecture" with "over CCDN"

**Proposed Response**

PROPOSED ACCEPT IN PRINCIPLE.

CCDN (coax cable distribution network) is not defined to be necessarily P2MP.

**Comment**

Unclear description of the value that BurstTimeHeader function returns: "binary 1 followed by the 32-bit PHY Link timestamp value at the time of the call to this function followed by 0x D8 58 E4 AB." -

**Suggested Remedy**

Given the odd format, it might be simpler to represent it graphically, showing first bit field with the value of "1", followed by 4 octets (PHY Link timestamp), followed by 4 octets with the value of 0x D8 58 E4 AB. Alternatively, the following text description could be used:

"The BurstTimeHeader() function returns a 65-bit vector, with the following values:

bit <0> = binary 1

bits <1:32> = the current PHY Link timestamp

bits <33:64> = a fixed value of 0xD858E4AB.

This 65-bit vector is transmitted as the first 65-bit block of the upstream burst."

**Proposed Response**

PROPOSED ACCEPT IN PRINCIPLE.

Per alt suggestion.

**Comment**

Reference to CRC40 calculation should be added

**Suggested Remedy**

Reference to CRC40 calculation should be added

**Proposed Response**

PROPOSED ACCEPT.

Per alt suggestion.

**Comment**

Incorrect opening bracket: FIFO_FEC_TX[sizeFifo]

**Suggested Remedy**

Change to FIFO_FEC_TX[sizeFifo]

**Proposed Response**

PROPOSED ACCEPT.
Proposed Response

Comment Type: TR
Comment Status: D
State diagrams shown in Figure 101-3 and Figure 101-4 operate in parallel, which means that each passing (I+E) character is counted by both state diagrams. Since both state diagrams do not synchronize variables in any way, this is what happens (just numeric example):
- after observing some non-(I+E) characters, both SDs update their counters, waiting for (I+E) characters to be deleted
- if in both state diagrams, UPDATE_COUNTERS states are reached simultaneously, on next (I+E) character, both SDs will identify it for deletion and enter DELETE_IDLEs state, decrementing countDeleteF/countDeleteP variable
- however, only one (I+E) character will be effectively deleted, compensating for either FEC_OSize or PHY_OSize, but not for both

Suggested Remedy
Update CNU state diagram, by collapsing Figure 101–3 and Figure 101–4 together into a single state diagram, including residual value calculation, following CLT mechanism. The current mechanism does not operate correctly.

Proposed Response

Comment Type: TR
Comment Status: D

Proposed ACCEPT IN PRINCIPLE.

Changed:
- FEC_OSize -> DS_FEC_OSize
- PHY_DSize -> DS_PHY_DSize
- PHY_OSize -> DS_PHY_OSize
- countVectorT -> countVector


Moved: countDelete from 101.3.2.1.2 Variables to 101.3.2.1.3 Counters

Modified Fig 101-2 accordingly

Combined Fig 101-3 & 101-4 to operate assuming the minimum FEC size. This ensures that the US burst is less than or equal to the time set per MPCP.

Deleted Fig 101-4

This change is included in remein_3bn_22_0915
IEEE 802.3bn EPON Protocol over Coax (EPoC) TF Initial Working Group ballot comments

Proposed Responses

Cl 101 SC 101.3.2.5.2 P 145 L 21 # 3850
Hajduczenia, Marek Bright House Networks

Comment Type TR Comment Status D Burst Structure, Soc

"In the CLT only, a 65-bit burst time header is placed (accumulated) as the first 65-bit block at the start of a burst."

SuggestedRemedy

CLT does not send data in bursts, so the statement is not correct. It is not clear what the original intent of the text is, what the "burst time header" is, and where it is located. A reference to figure demonstrating said elements is needed.

PROPOSED ACCEPT IN PRINCIPLE.
See Cmt# 3851

Cl 101 SC 101.3.2.5.2 P 147 L 50 # 3851
Hajduczenia, Marek Bright House Networks

Comment Type TR Comment Status D Burst Structure, Soc

"starting burst marker", "burst time header", "burst marker" - which is it? Are these the same?

SuggestedRemedy

Please align your terminology - "burst start marker" would be preferred to align concepts with 10G-EPON. There are multiple instances of these terms in Clause 101, including Figure 101-7 (for example).

For symmetry, "ending burst marker" should be "burst end marker"

PROPOSED ACCEPT IN PRINCIPLE.

Add "but added by the PMA" to the sentences so they read:
"The start burst marker is not part of the first FEC codeword but added by the PMA."
"The stop burst marker is not part of the last FEC codeword but added by the PMA."

Cl 101 SC 101.3.2.5.2 P 148 L 39 # 3853
Hajduczenia, Marek Bright House Networks

Comment Type TR Comment Status D Burst Structure, Soc

"All codeword encoding follows the same procedures as the downstream with the following differences:"

"It is not clear where data burst structure is available in the downstream - there are no burst markers, no burst structure, data is encoded at a single Tx and received by multiple Rx.

SuggestedRemedy

At this time, it is not clear where downstream burst structure is defined, and then what needs to be defined here, apart from the fact that data is always encoded into whole long FEC codewords. Unless it is clarified, I suggest to have text in lines 39-47 removed - it is confusing as it is right now.

PROPOSED ACCEPT.

Cl 45 SC 2.7a.6 P 62 L 27 # 3854
McDermott, Thomas Fujitsu

Comment Type E Comment Status D EZ

The word register is mis-spelled

SuggestedRemedy

Change register to register

PROPOSED ACCEPT.
IEEE 802.3bn EPON Protocol over Coax (EPoC) TF Initial Working Group ballot comments

**Proposed Responses**

**Cl 100 SC 2.7.3**

- **Comment Type**: E
- **Comment Status**: D

Typographical error, specifies GHz, should specify MHz.

**Proposed Response**

- **Response Status**: W

PROPOSED ACCEPT.

**Cl 100 SC 2.8.1**

Text is confusing, does not specify which part of the spectrum of the outlying carrier. Revise the text as suggested.

**Proposed Response**

- **Response Status**: W

PROPOSED ACCEPT IN PRINCIPLE.

**Cl 100 SC 2.9.2**

The paragraph defines the channel power, but does not discuss or relate this to any fidelity requirement. Either the paragraph is mis-titled, or text needs to be added to discuss the relationship between the power and some fidelity requirement.

**Proposed Response**

- **Response Status**: W

PROPOSED ACCEPT IN PRINCIPLE.

CNU Fidelity requirements are later in "100.2.9.5 OFDMA fidelity requirements" The paragraph speaks to OFDMA channel power.

Suggested remedy: move paragraph as the first paragraph of the next subclause "100.2.9.3 Transmit power Requirements". Delete subclause heading "100.2.9.2 Fidelity requirements" as it is duplicative with 100.2.9.5.

**Cl 100 SC 2.12.3**

The term 'complex scalar' is not correct. A scalar is a real number, whilst a 'complex number' is a vector. Each term in the preceding equation is in fact a single complex number for each subcarrier. The |e|^2 operation converts the error vector (a complex number) to a scalar, which is then time-averaged.

**Proposed Response**

- **Response Status**: W

PROPOSED ACCEPT.

**Cl 100 SC 2.13.1**

The encompassed spectrum is the difference between the center frequency of the highest frequency active subcarrier of the highest frequency OFDM channel and the center frequency of the lowest frequency active subcarrier of the lowest frequency OFDM channel, plus the subcarrier spacing (all expressed in MHz). The encompassed spectrum of a single OFDM channel is the difference between the center frequency of the highest frequency active subcarrier and the center frequency of the lowest frequency active subcarrier in the OFDM channel, plus the subcarrier spacing.

**Proposed Response**

- **Response Status**: W

PROPOSED ACCEPT IN PRINCIPLE.

Pg 91, Line 37 begins with the definition of modulated spectrum not encompassed spectrum. Applying alternate suggested change for Paragraph on Line 17:

“The encompassed spectrum is the difference between a) the center frequency of the highest frequency active subcarrier of the highest frequency OFDM channel and b) the center frequency of the lowest frequency active subcarrier of the lowest frequency OFDM channel, plus the subcarrier spacing (all expressed in MHz). The encompassed spectrum of a single OFDM channel is the difference between the center frequency of the highest frequency active subcarrier and the center frequency of the lowest frequency active subcarrier in the OFDM channel, plus the subcarrier spacing.”

**Cl 100 SC 2.9.2**

- **Comment Type**: E
- **Comment Status**: D

The paragraph defines the channel power, but does not discuss or relate this to any fidelity requirement. Either the paragraph is mis-titled, or text needs to be added to discuss the relationship between the power and some fidelity requirement.

**Proposed Response**

- **Response Status**: W

PROPOSED ACCEPT.

**Cl 100 SC 2.12.3**

- **Comment Type**: E
- **Comment Status**: D

The term 'complex scalar' is not correct. A scalar is a real number, whilst a 'complex number' is a vector. Each term in the preceding equation is in fact a single complex number for each subcarrier. The |e|^2 operation converts the error vector (a complex number) to a scalar, which is then time-averaged.

**Proposed Response**

- **Response Status**: W

PROPOSED ACCEPT.
IEEE uses an en-dash for a minus sign. The draft contains many instances of a hyphen being used instead.

**Suggested Remedy**

Where a hyphen is used as a minus sign, replace with an en-dash. The editor has been sent a marked up copy of the draft showing 83 instances that should be replaced.

**Proposed Response**

**Response Status** W

PROPOSED ACCEPT.

The spelling of "Implementors" has been changed to "Implementers" in the latest IEEE style guide (and the latest 802.3 template)

**Suggested Remedy**

Change ""Implementors" to "Implementers"

**Proposed Response**

**Response Status** W

PROPOSED ACCEPT.

There are still many instances of text that should be cross-references. Since they are text, they should be checked for accuracy before being made cross-references.

**Suggested Remedy**

Change the following text to cross-references:

- Page 55, line 45 "102.2.6.2"
- Page 59, line 14 "102.2.3"
- Page 109, line 22 "100.2.9.1"
- Page 122, line 1 "Clause 100"
- Page 148, line 9 "Table 101–4"
- Page 153, line 27 "Figure 100-3"
- Page 153, line 27 "100.2.9.7"
- Page 173, line 12 "Table 100-2"
- Page 173, line 42 "101.4.2.5.1"
- Page 180, line 36 "101.4.3.6.4"
- Page 180, line 37 "101.4.3.6.x" (with correct reference)
- Page 180, line 40 "101.4.2.1"
- Page 186, line 24 "Figure 4" (with correct reference)
- Page 196, line 46 "Table 100-1"
- Page 197, line 14 "Table 100-1"
- Page 206, line 15 "Figure 101.x.x.x" (with correct reference)
- Page 212, line 17 "101.x.x.x" (with correct reference)
- Page 212, line 18 "101.4.3.8.1"
- Page 231, line 47 "Figure 101-15"
- Page 243, line 6 "Clause 45" (should not be forest green)
- Page 243, line 13 "CI 45" (Should be "Clause 45")
- Page 284, line 49 "102.4.1.6"
- Page 296, line 30 "Table 103-1"
- Page 304, line 21 "Table 101-2"
- Page 334, line 2 "Annex 31B"

**Proposed Response**

**Response Status** W

PROPOSED ACCEPT IN PRINCIPLE.

However Page 148, line 9 should be "Table 101–2"
IEEE 802.3bn EPON Protocol over Coax (EPoC) TF Initial Working Group ballot comments

Draft 2.0

Proposed Responses

Cl 101 SC 101.4.2.8.3 P 186 L 8 # 3865
Anslow, Pete Ciena

Comment Type E Comment Status D EZ

This says "arranged in a 2-D store". However, the term "2D" is used in Clause 55 for two-dimensional without the hyphen.

Suggested Remedy

Change all 11 instances of "2-D" in the draft to "2D"

Proposed Response Response Status W

PROPOSED ACCEPT.

Impacts Cl 101 & 102

Cl 101 SC 101.4.2.11 P 191 L 32 # 3866
Anslow, Pete Ciena

Comment Type E Comment Status D EZ

Numbers should be separated from their unit with a non-breaking space (Ctrl space) to avoid the number and the unit being on different lines

Proposed Response Response Status W

PROPOSED ACCEPT.

Cl 101 SC 101.4.2.12 P 193 L 50 # 3867
Anslow, Pete Ciena

Comment Type E Comment Status D EZ

1.2.6 Accuracy and resolution of numerical quantities states:
Unless otherwise stated, numerical limits in this standard are to be taken as exact, with the number of significant digits and trailing zeros having no significance.
Consequently, the entries in Table 101–11 and 101.18 should not contain trailing zeros.

Proposed Response Response Status W

PROPOSED ACCEPT.
IEEE 802.3bn EPON Protocol over Coax (EPoC) TF Initial Working Group ballot comments

Proposed Responses

---

**Comment ID: 3868**

**Commenter:** Anslow, Pete

**Company:** Ciena

**Comment Type:** E  
**Comment Status:** D  
**Response Status:** W  
**Proposed Response:** PROPOSED ACCEPT.

**Cl 101 SC 101.4.3.2.3 P 198 L 11 # 3868**

Anslow, Pete  
Ciena

**Comment Type:** E  
**Comment Status:** D  
**Response Status:** W  

Proposed Response

---

**Cross-referenced to other sub-clauses in IEEE standards are not preceded by "Section"**

**SuggestedRemedy:**

Change "as specified in Section 101.4.3.2.2" to "as specified in 101.4.3.2.2"

---

**Comment ID: 3869**

**Commenter:** Anslow, Pete

**Company:** Ciena

**Comment Type:** E  
**Comment Status:** D  
**Response Status:** W  
**Proposed Response:** PROPOSED ACCEPT.

**Cl 101 SC 101.4.3.7.1 P 212 L 15 # 3869**

Anslow, Pete  
Ciena

**Comment Type:** E  
**Comment Status:** D  
**Response Status:** W  

Proposed Response

---

"RB_Type" and "RB_Frame_start" are split across two lines, which is a bad thing to do with variable names.

**SuggestedRemedy:**

Tell FrameMaker not to hyphenate these two variable names. (Click on the variable name and type Esc n s to do this)

---

**Comment ID: 3870**

**Commenter:** Anslow, Pete

**Company:** Ciena

**Comment Type:** E  
**Comment Status:** D  
**Response Status:** W  
**Proposed Response:** PROPOSED ACCEPT.

**Cl 101 SC 101.4.3.9.2 P 218 L 45 # 3870**

Anslow, Pete  
Ciena

**Comment Type:** E  
**Comment Status:** D  
**Response Status:** W  

Proposed Response

---

The 802.3 web page: http://www.ieee802.org/3/WG_tools/editorial/requirements/words.html says that 802.3 will use "peak-to-peak" (in text)

**SuggestedRemedy:**

Change "p-p" to "peak-to-peak" 4 times in 101.4.3.9.2

---

**Comment ID: 3871**

**Commenter:** Anslow, Pete

**Company:** Ciena

**Comment Type:** E  
**Comment Status:** D  
**Response Status:** W  
**Proposed Response:** PROPOSED ACCEPT.

**Cl 101 SC 101.6.2 P 227 L 1 # 3871**

Anslow, Pete  
Ciena

**Comment Type:** E  
**Comment Status:** D  
**Response Status:** W  

Proposed Response

---

"IEEE Std 802.3xx" should be "IEEE Std 802.3bn"  
Page 8, line 4  
Page 8, line 13  
Page 8, line 14  
Page 10, line 29  
Page 287, line 34  
Page 287, line 40  
Page 345, line 26  
Page 345, line 32

**Proposed Response**  
**Response Status:** W  
**Proposed Response**  
**Response Status:** W  
**Proposed Response**  
**Response Status:** W  
**Proposed Response**  
**Response Status:** W

---

**Comment ID: 3872**

**Commenter:** Anslow, Pete

**Company:** Ciena

**Comment Type:** E  
**Comment Status:** D  
**Response Status:** W  
**Proposed Response:** PROPOSED ACCEPT.

**Cl 102 SC 102.5.2.2 P 287 L 34 # 3872**

Anslow, Pete  
Ciena

**Comment Type:** E  
**Comment Status:** D  
**Response Status:** W  

Proposed Response

---

"IEEE Std 802.3xx" should be "IEEE Std 802.3bn"

**SuggestedRemedy:**

Change "IEEE Std 802.3xx" to "IEEE Std 802.3bn"

Page 8, line 4  
Page 8, line 13  
Page 8, line 14  
Page 10, line 29  
Page 287, line 34  
Page 287, line 40  
Page 345, line 26  
Page 345, line 32

**Proposed Response**  
**Response Status:** W  
**Proposed Response**  
**Response Status:** W  
**Proposed Response**  
**Response Status:** W  
**Proposed Response**  
**Response Status:** W

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**Comment ID: 3873**

**Commenter:** Anslow, Pete

**Company:** Ciena

**Comment Type:** E  
**Comment Status:** D  
**Response Status:** W  
**Proposed Response:** PROPOSED ACCEPT.
Proposed Responses

**CI 101 SC 101.6.4.2 P 228 L 29 # 3874**

Anslow, Pete Ciena

**Comment Type** E **Comment Status** D EZ

*Transmission* should be *Transmission*

**Suggested Remedy**

Change *Transmission* to "Transmission"

**Proposed Response** Response Status W

PROPOSED ACCEPT.

---

**CI 102 SC 102.1.4.1.1 P 239 L 39 # 3875**

Anslow, Pete Ciena

**Comment Type** E **Comment Status** D EZ

Tables 102-1 and 102-2 have blank cells filled with hyphens, but the IEEE style guide says that empty cells should contain em-dash

**Suggested Remedy**

Replace the hyphens in Tables 102-1 and 102-2 with em-dash

**Proposed Response** Response Status W

PROPOSED ACCEPT.

---

**CI 102 SC 102.1.8 P 243 L 12 # 3876**

Anslow, Pete Ciena

**Comment Type** E **Comment Status** D EZ

The IEEE Style manual contains:

"Ranges should repeat the unit (e.g., 115 V to 125 V). Dashes should never be used because they can be misconstrued as subtraction signs."

Hence, ":(i.e., 0-99)" should be "(i.e., 0 to 99)"

Same issue in the first row of Table 102-6

**Suggested Remedy**

Change "(i.e., 0-99)" to "(i.e., 0 to 99)"

In the first row of Table 102-6, change "0x00-0x08" to "0x00 to 0x08"

**Proposed Response** Response Status W

PROPOSED ACCEPT.

---

**CI 103 SC 103.4 P 345 L 3 # 3879**

Anslow, Pete Ciena

**Comment Type** E **Comment Status** D EZ

The Clause 103 PICS is missing an introduction subclause

**Suggested Remedy**

Add an introduction as per the 802.3 template:

"103.4.1 Introduction

The supplier of a protocol implementation that is claimed to conform to Clause 103, Multipoint MAC Control for EPoC, shall complete the following protocol implementation conformance statement (PICS) proforma."

A detailed description of the symbols used in the PICS proforma, along with instructions for completing the PICS proforma, can be found in Clause 21."

with "Clause 21" in forest green

**Proposed Response** Response Status W

PROPOSED ACCEPT.
IEEE 802.3bn EPON Protocol over Coax (EPoC) TF Initial Working Group ballot comments

Proposed Responses

Cl/103 SC 103.4.1.2 P 345 L 26 # 3880
Anslow, Pete
Ciena

Comment Type E Comment Status D
"Clause 103, clause title" should be "Clause 103, Multipoint MAC Control for EPoC"

SuggestedRemedy
Change "Clause 103, clause title" to "Clause 103, Multipoint MAC Control for EPoC"

Proposed Response Response Status W
PROPOSED ACCEPT.

Cl/100A SC 100A.2 P 354 L 19 # 3881
Anslow, Pete
Ciena

Comment Type E Comment Status D
An error rate would be errors per unit time (e.g., errors per second). Errors are usually characterised as the number of errors divided by the number of bits, so "Error rate simulation..." should be "Error ratio simulation..."

SuggestedRemedy
Change "Error rate simulation..." to "Error ratio simulation..."

Proposed Response Response Status W
PROPOSED ACCEPT.

Cl/100 SC 100.2.12.2 P 113 L 48 # 3883
Anslow, Pete
Ciena

Comment Type T Comment Status D
In the title of 100.2.12.2.1, "CNU error rate performance" should be "CNU error ratio performance" (an error rate would be errors per unit time).

However, since the specification is given in terms of a frame loss ratio, it would be better to change the title to: "CNU error performance in AWGN channel"

SuggestedRemedy
Change the title to: "CNU error performance in AWGN channel"

Proposed Response Response Status W
PROPOSED ACCEPT IN PRINCIPLE:
Also look for if we have any "error rate" or "error ratio" and change to "error performance" in this specification.

Change from 100 to 00 by Editor.

Cl/113 SC 100.2.12.2 P 113 L 46 # 3884
Anslow, Pete
Ciena

Comment Type T Comment Status D
This says "at which the CNU is required to meet this error ratio., but the specification is given in terms of a frame loss ratio.

SuggestedRemedy
Change "to meet this error ratio" to "to meet this frame loss ratio"

Proposed Response Response Status W
PROPOSED ACCEPT IN PRINCIPLE
Adapt wording to that that gets accepted for #3930.

Cl/113 SC 100.2.12.2.1 P 113 L 50 # 3885
Anslow, Pete
Ciena

Comment Type T Comment Status D
In "less than or equal that shown in when operating", there is a missing pointer to the location of the FLR specification

SuggestedRemedy
Change to "less than or equal that shown in 100.2.12.2 when operating"

Proposed Response Response Status W
PROPOSED ACCEPT IN PRINCIPLE.
Add the cross reference to the text changes for comment 3930.
IEEE 802.3bn EPON Protocol over Coax (EPoC) TF Initial Working Group ballot comments

Proposed Responses

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<thead>
<tr>
<th>Cl</th>
<th>SC</th>
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<th>L</th>
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<th>Comment Type</th>
<th>Comment Status</th>
<th>Suggested Remedy</th>
<th>Proposed Response</th>
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Comment Type: TR/technical required ER/editorial required GR/general required T/technical E/editorial G/general

COMMENT STATUS: D/dispatched A/accepted R/rejected RESPONSE STATUS: O/open W/written C/closed U/unsatisfied Z/withdrawn

SORT ORDER: Comment ID
IEEE 802.3bn EPON Protocol over Coax (EPoC) TF Initial Working Group ballot comments

Proposed Responses

---

Comment ID 3892

Cl 101 SC 101.4.4.1 P 221 L 28 # 3892
Lusted, Kent
Intel

Comment Type E Comment Status D

The text for "Gray1(f(0)) = 1" and "Gray1(1) = -1" is a different font size.

Same for the Graym text in #2.

Suggested Remedy
consider using the same font size

Proposed Response Response Status W

PROPOSED REJECT.
The equations "Gray1(f(0)) = 1", "Gray1(1) = -1", and "Graym(....)" have been entered using the Med equation editor in FramMaker and are consistent with the 802.3 template.

---

Comment ID 3893

Cl 102 SC 102.5.4.3 P 289 L 25 # 3893
Lusted, Kent
Intel

Comment Type E Comment Status D

Typo in value/comment box for "withing"

Suggested Remedy
change to "within"

Proposed Response Response Status W

PROPOSED ACCEPT.

---

Comment ID 3894

Cl 01 SC 1.4 P 26 L 11 # 3894
Lusted, Kent
Intel

Comment Type ER Comment Status D

The PMD type 10GPASS-XR is not listed in the definitions of the standard.

Suggested Remedy
Add definition for 10GPASS-XR

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

Add:
1.4.144a coax cable distribution network: would be
1.4.144a coax cable distribution network (CCCDN):

Ref:
1.4.42 10/1GBASE-PRX: A collection of IEEE 802.3 Physical Layer specifications for a 10 Gb/s downstream, 1 Gb/s upstream (10/1G-EPON) point-to-multipoint link over one single-mode optical fiber. (See IEEE Std 802.3, Table 56–1, Clause 75, Clause 76, and Clause 77.)

---

Comment ID 3895

Cl 56 SC Table 56-3 P 72 L 40 # 3895
Lusted, Kent
Intel

Comment Type ER Comment Status D

EZ

The entry for 10GPASS-XR is not consistent with the other entries in the table, which have a -U or a -D appendix on the nomenclature.

Listing both -U and -D would also then match the terms used in Table 56-11.

Suggested Remedy
list 10GBASE-XR as 2 entries: one for the 10GPASS-XR-U and one for 10GPASS-XR-D.

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.
As suggested, coordinate with the changes as per comment #4062.

---

Comment ID 3896

Cl 45 SC 45.2.1.161.3 P 54 L 30 # 3896
Remein, Duane
Huawei Technologies

Comment Type E Comment Status D

EZ

typo: "bits indicates"

Suggested Remedy
to: "bits indicate"

Proposed Response Response Status W

PROPOSED ACCEPT.

---

Comment ID 3897

Cl 01 SC 1.4 P 26 L 20 # 3897
Remein, Duane
Huawei Technologies

Comment Type E Comment Status D

EZ

It appears to be common practice to include the mnemonic in parenthesis after the term so for example
1.4.144a coax cable distribution network: would be
1.4.144a coax cable distribution network (CCCDN):

Suggested Remedy
Add mnemonics to the following as shown
1.4.144a coax cable distribution network (CCCDN):
1.4.145b coax line terminal (CLT):
1.4.146c coax network unit (CNU):
1.4.170a cyclic prefix (CP):

Proposed Response Response Status W

PROPOSED ACCEPT.
Comment Type E Comment Status D
in 30.3.2.1.2 we list:
"ATTRIBUTE
APPROPRIATE SYNTAX:"
While in 30.3.2.1.3, and 30.5.1.1.2 we don't.

We should be consistent.

Suggested Remedy
Add
"ATTRIBUTE
APPROPRIATE SYNTAX:"
immediately following the Editing Instruction in 30.3.2.1.3, and 30.5.1.1.2

Proposed Response Response Status W
PROPOSED REJECT.
This comment conflicts with #3843 which suggests deleting this same text to the other CL 30 clauses. The TF needs to pick one method.

Comment Type E Comment Status D
We should be explicit about which table is being changed in the Editing Instruction

Suggested Remedy
Add " in Table 45-3 " so the instruction reads:
"Change the identified reserved row and insert a new row above it in Table 45-3 as follows
(unchanged rows not shown):"

Editor to review all editing instructions in Cl 45 and make similar changes as needed.

Editor to ensure all editing instructions end with a colon.

Proposed Response Response Status W
PROPOSED ACCEPT.
See Cmt 3935
IEEE 802.3bn EPON Protocol over Coax (EPoC) TF Initial Working Group ballot comments

Proposed Responses

Draft 2.0

Proposed Response

Comment 3901

DS_RateMatchFail and US_RateMatchFail determined but there is no way to report this.

Suggested Remedy

Add formal definition of each variable in 100.2.6.3

DS_RateMatchFail

TYPE: Boolean
This variable is set to TRUE if the CNU calculation of DS_DataRate differs from the DS_DataRate calculation communicated from the CLT by more than 10 b/s otherwise the variable is set to FALSE.

US_RateMatchFail

TYPE: Boolean
This variable is set to TRUE if the CNU calculation of US_DataRate differs from the US_DataRate calculation communicated from the CLT by more than 10 b/s otherwise the variable is set to FALSE.

Add entries in Table 100-1 for DS_RateMatchFail & US_RateMatchFail as follows:

US rate mismatch | 10GPASS-XR control | US_RateMatchFail | 1.1900.12 | 0 | 12
DS rate mismatch | 10GPASS-XR control | DS_RateMatchFail | 1.1900.11 | 0 | 11

Add Status bit for these variables in Cl 45 Register 1900. In Table 45–98a add two new lines modifying the reserved line accordingly:

"1.1900.12 | US rate mismatch[b] | 0 = the upstream rate calculated at the CNU and the CLT is mismatched by greater than 10 b/s 1 = the upstream rate calculated at the CNU and the CLT matches within 10 b/s | RO
1.1900.11 | DS rate mismatch[b] | 0 = the downstream rate calculated at the CNU and the CLT is mismatched by greater than 10 b/s 1 = the downstream rate calculated at the CNU and the CLT matches within 10 b/s | RO

Add new 45.2.1.131.1 & 45.2.1.131.2 renumbering as required

45.2.1.131.1 US rate mismatch (1.1900.12)
Bit 1.1900.12 indicates that, when read as a 1, the upstream rate calculated at the CNU and the CLT is mismatched by greater than 10 b/s. This bit is a reflection of the US_RateMatchFail variable defined in 100.2.6.3.

45.2.1.131.2 DS rate mismatch (1.1900.11)
Bit 1.1900.12 indicates that, when read as a 1, the downstream rate calculated at the CNU and the CLT is mismatched by greater than 10 b/s. This bit is a reflection of the DS_RateMatchFail variable defined in 100.2.6.3.

Proposed Response

PROPOSED ACCEPT.

Comment 3902

MR in PICS states "" however in 100.2.7.1 & 100.2.7.2 there individual requirements for each direction.

Suggested Remedy

Add below 100.2.7

"Equipment conforming to this standard shall clearly mark supported downstream and upstream frequency ranges."

Remove the last sentence in para’s 100.2.7.1 & 100.2.7.2 that both begin "Equipment conforming to this standard shall clearly mark supported ..."

Proposed Response

PROPOSED ACCEPT.

Comment 3903

"For an Neqport-channel per RF port CLT," Neqport is not format as per other instances ("eqport" is subscripted here)

And what is an "Neqport-channel per RF port CLT"?

Suggested Remedy

Correct formatting and add clarification (which I would normally suggest but I've really no idea what is intended here).

Proposed Response

PROPOSED ACCEPT IN PRINCIPLE.

Change: "For an Neqport-channel per RF port CLT, the applicable maximum power per OFDM channel and spurious emissions requirements are defined using the value of N* per Equation (100-6)," to "The applicable maximum power per OFDM channel and spurious emissions requirements are defined for the CLT using the value of N* per Equation (100-6)." Also correct the any formatting issues.

Proposed Response

PROPOSED ACCEPT.
**Proposed Response#3904**

**Comment Type:** T  
**Comment Status:** D  
**Upstream power reporting**

"P1.6t", or "P1.6r"?

Line 24 speaks to "target transmit normalized channel power" but the subsequent formula is for "reported power level".

I smell fish. I also don't know of any way the CNU has of reporting the P1.6r reported power as there is no Cl 45 register defined for it.

**Suggested Remedy**

Change to "P1.6r"

**Proposed Accept in Principle.**

P1.6t matches what is in DOCSIS PHY 3.1.

Need to add Clause 45 support for CNU reporting power power for the channel as required for this section. This is an oversight.

Align variables creation with comment #3934.

*(NOTE: The fish is could likely be salmon.)*

**Comment Status:** D  
**Response Status:** W  
**Remein, Duane**  
**Huawei Technologies**

---

**Proposed Response#3905**

**Comment Type:** T  
**Comment Status:** D  
**Equation 100-11**

Eq 100-11 does not define NS_Max as implied by the statement "Let NS_ - Max be the number of modulated subcarriers in an OFDMA symbol as per Equation (100-11):"

**Suggested Remedy**

Change para to read:

"The parameter SpurFloor is related to the ratio of the number of subcarriers being modulated by a CNU in an OFDMA symbol to the maximum number of subcarriers available (3840) including guardbands and is calculated per Equation (100-11): (**Equation 101-11 as per draft**)"

Where:

NS_Max is the number of modulated subcarriers in an OFDMA symbol"

**Proposed Response**

**Response Status:** W  
**PROPOSED ACCEPT.**

**Comment Status:** D  
**Response Status:** W  
**Remein, Duane**  
**Huawei Technologies**

---

**Proposed Response#3906**

**Comment Type:** T  
**Comment Status:** D  
**Measurement Bandwidth**

I believe Measurement Bandwidth in Eq 100-14 should be MeasurementBW as should have been defined in 100.2.9.5.1.

**Suggested Remedy**

Change Measurement Bandwidth to MeasurementBW

**Proposed Response**

**Response Status:** W  
**PROPOSED REJECT.**

This was remedied as per prior comment. Measurement Bandwidth is the values from the indicated columns from Table 100-8 and 100-9.

---

**Comment ID:** 3907  
**Page 69 of 124**  
**TYPE:** TR/technical required  
**ER/editorial required**  
**GR/general required**  
**T/technical**  
**E/editorial**  
**G/general**  
**COMMENT STATUS:** D/dispatched  
**A/accepted**  
**R/rejected**  
**RESPONSE STATUS:** O/open  
**W/written**  
**C/closed**  
**U/unsatisfied**  
**Z/withdrawn**  
**SORT ORDER:** Comment ID  
**9/8/2015 6:20:55 PM**
I believe this delay time also needs to include the URNrb and USNcp times.
"The delay time through the EPoC PMA (TPMA) is no less than the sum of the RBframe size
multiplied by the OFDM symbol time (RBsize of 8 times or 16 times 20 fYs, see 100.2.9.1)
plus the implementation specific processing time of the IDFT (nominal range 10 fYs to 40 fYs)."

Suggested Remedy

Change to
"The delay time through the EPoC PMA (TPMA) is no less than the sum of the RBframe size
multiplied by the OFDM symbol time (RBsize of 8 times or 16 times 20 fYs plus equivalent
time in fY of USNcp and USNrp) see 100.2.9.1) plus the implementation specific processing
time of the IDFT (nominal range 10 fYs to 40 fYs)."

Use care for symbols and variable name in italics.

Proposed Response  
Response Status  W

PROPOSED REJECT.
Window size does not added to extended OFDM symbol duration. Current text reads "no less
than" and places the burden on the implementer for determining the value for the
implementation dependent timer, so therefore is correct as is. The cyclic prefix is very small
compared to symbol time, so has little impact. If the TF really wants to add CP time, it can.

Suggested Remedy

"The CLT shall be configured according to" to
"The CLT should be configured according to"

Proposed Response  
Response Status  W

PROPOSED ACCEPT IN PRINCIPLE.
Change to "should be" as indicated. Also remove corresponding line from PICS
<table>
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<th>CI</th>
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<th>P 116</th>
<th>L 41</th>
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</table>

**Comment Type** T  **Comment Status** D

This rule contradicts the first rule in the list:

"The minimum contiguous modulation band has to be 2 MHz"

The 4th rule in the list is not needed (there is only one profile)

**Suggested Remedy**

- Change 3rd item to
  "All contiguous modulation bands are to be 2 MHz or greater"
- Strike the 4th rule

**Proposed Response**

PROPOSED ACCEPT IN PRINCIPLE.

Also change: "Exclusion bands separate contiguous modulation bands." to "Exclusion bands may separate contiguous modulation bands."

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</table>

**Comment Type** T  **Comment Status** D

There are only two instances of the term "spanned modulation" in the draft, both in lines 48-49.

There is not need to create this unique term

**Suggested Remedy**

- Change the item from
  "Exclusion bands plus individually excluded subcarriers are limited to 20% or less of spanned modulation spectrum, where the spanned modulation spectrum is defined as: frequency of maximum active subcarrier - frequency of minimum active subcarrier."
- to
  "Exclusion bands plus individually excluded subcarriers are limited to 20% or less of the difference between the maximum and minimum frequencies of all active subcarriers."

**Proposed Response**

PROPOSED ACCEPT IN PRINCIPLE.

Also, Page 117, line 6, "subcarrier" to "subcarriers".

NOTE: RF folks are still thinking about this with respect to gaps between DS OFDM channels.

<table>
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<tr>
<th>CI</th>
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<th>P 117</th>
<th>L 15</th>
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</table>

**Comment Type** T  **Comment Status** D

To be clear the standard does not place restrictions on US excluded subcarrier however neither does it preclude such restrictions.

**Suggested Remedy**

- Add a clarifying statement
  "- CLTs may place restrictions on upstream subcarrier exclusion rules if any exist | CLT:M | Yes [ ] No [ ] N/A [ ]"

**Proposed Response**

PROPOSED REJECT. we don't need this statement in the specification as the CLT already must assign upstream subcarrier use, pre-equalizer coefficients, etc. specific to its receiver. Also, this opens the door on this standard having to predict everywhere we may anticipate that a vendor's product may need to put restrictions in data sheets. The Editor feels this comment is not necessary as we can't mandate open-ended stipulations on product documentation. If a CLT cannot handle some arbitrary set of exclusions that a cable operator wants to impose on the upstream, then that CLT is not compliant.
Proposed Responses

**Comment Type**: T  **Comment Status**: D

Which typically is typical?
Here we state:
"The measurement is based on upstream probes, which are typically the same probes used for
pre-equalization adjustment (see 101.4.3.9)."
In 100.2.11 pg 112 line 23 we state:
"The CLT measures the RxMER using an upstream probe. The probes used for RxMER
measurement are typically distinct from the probes used for pre-equalization adjustment."

One must be wrong

**Suggested Remedy**
Here in 100.3.3 strike ", which are typically the same probes used for pre-equalization
adjustment (see 101.4.3.9)"
In 100.2.11 strike "The probes used for RxMER measurement are typically distinct from the
probes used for pre-equalization adjustment."

**Proposed Response**  **Response Status**: W

PROPOSED ACCEPT IN PRINCIPLE.
The suggested remedy is good. Delete the distinction sentences.

---

**Comment Type**: T  **Comment Status**: D

Per 1.4.165 continuous wave (CW): A carrier that is not modulated or switched.
Substituting this definition for the 18 instances of "CW" in the subclause creates grammatical
errors and is technically incorrect as all our active subcarriers are modulated with at least
PBSK.

There are lots of other grammatical errors and technical inconsistencies which should be
corrected in this section: for ex
pg 118 In 52 "In this configuration the EPoC OFDM continuous pilot is in fact phase continuous
in the time domain; in general the continuous pilots are not phase continuous in the time
domain," so continuous pilots are phase continuous but they’re not.
Pg 118 line 53 "Continuous pilot means that subcarrier is continuously used ..." grammar

**Suggested Remedy**
Sorry but I’m at a loss as to how to fix this.
Grammatical errors could be fixed by ensuring there is an article, such as "a" or "the" before
each instance of CW and the word "signal" after. This should be done at a minimum.

The higher level technical issue is a bit more thorny.

**Proposed Response**  **Response Status**: W

PROPOSED REJECT.
Remedy is not specific enough on "grammatical errors". Use of "CW" is consistent with
existing Clause 1 definition for the signal that is used as part of the measurement conditions for
this subclause on "test phase noise requirements".
This comment is essentially a resubmittal of withdrawn comment #3443 against D1.4. The wording of these para's are overly complex and, in some cases incorrect:

"The CLT downstream OFDM symbol and subcarrier frequency and timing relationship is defined in 101.4.2.3. Tolerances for the downstream subcarrier clock frequency are given in this subclause Table 100-3). Functional requirements involving ... and downstream subcarrier frequencies."

Can we just say that if you pass the phase noise it can be assume that the clock jitter requirements are met? Can we make Table 101-9 informative (since otherwise we need to identify a place where it is to be measured).

Note that the xref to Table 100-3 is tied to Figure 100-3 and needs to be corrected also.

SuggestedRemedy

PROPOSED ACCEPT IN PRINCIPLE.
See lauback_3bn_10_0915.pdf

How is this statement accomplished?
"The configured average power of an equivalent 6 MHz channel for the second channel is equal to the configured average power of an equivalent 6 MHz channel for the first channel plus X dB. Different offsets are computed separately for the third, fourth, and fifth channels."

It seems to contradict the definition of DS_PowerCh(n)
Type: 9-bit unsigned integer.
This variable specifies the downstream CLT transmit power, in units of 0.2 dBmV / 6MHz, for OFDM channel n (1 "T n "T 5). The value is set according to the requirements in Table 100\|V5." Which says nothing about offsets from Ch1

SuggestedRemedy

Change lines 8-17 beginning ... ending with "- The configured average power of an equivalent ...

To

"The configured average power of an equivalent 6 MHz channel for each OFDM channel is set using the DS_PowerCh(n) variable where n is the channel number."

PROPOSED ACCEPT.

"OFDM channel bandwidth" the same as that for OFDMchannelbandwidth used (but not well defined in the text) in Eq 100-4?"

SuggestedRemedy

If Yes then Add "(OFDMchannelbandwidth)" in table 100-3 Parameter column in same row as "OFDM channel bandwidth"

PROPOSED ACCEPT.
Draft 2.0

IEEE 802.3bn EPON Protocol over Coax (EPoC) TF Initial Working Group ballot comments

Proposed Responses

---

**Comment ID** 3922

Cl 100 SC 100.2.8.4 P 95 L 28 # 3922

Remein, Duane
Huawei Technologies

Comment Type TR Comment Status D

Table 100-5 row 4, 5, & 6 “with commanded power difference removed if channel power is independently adjustable”

What does this mean? We have independent power settings per OFDM Channel (see DS_PowerCh(n) in 100.2.8.2.1) hence in EPoC channel power is always independently adjustable.

Suggested Remedy

Change

"with commanded power difference removed if channel power is independently adjustable" to

"with all OFDM channels set to the same power level"

Proposed Response Response Status W

PROPOSED REJECT.
Applying only to channels of equal power is a substantial reduction of the scope of the requirement.

Please consider the following.

The requirement we are discussing at this moment boils down to:

Power per equivalent 6 MHz channel, for channel A = A_dB
Power per equivalent 6 MHz channel, for channel B = B_dB

Then there is a requirement that:

Absolute value [ (Data subcarrier power for Ch A) - (Data subcarrier power for Ch B) ] < 0.5 dB

(Note that the power of pilots is also actually included, and averaging of the power would be in order. There are requirements on flatness or accuracy of the subcarrier powers in each channel independently. This requirement is aimed at ensuring that the various channels are set accurately with respect to each other. Absolute accuracy is another requirement, and is not as tight as the relative accuracy between channels.)

If the TF wants this explanation placed into the draft, then the TF can help craft the text during comment resolution.

---

**Comment ID** 3923

Cl 100 SC 100.2.8.5 P 96 L 10 # 3923

Remein, Duane
Huawei Technologies

Comment Type TR Comment Status D

I find at least 6 shall statements defining various conditions under which Out-of-band noise and spurious must be met yet there is only one requirement for Out-of-band noise and spurious in the PICS (CLTSE). There should be a one-to-one correspondence between shall statements and requirements.

Suggested Remedy

Reword the requirement in this section so that there is one global shall such as

"The CLT modulator shall satisfy the out-of-band spurious emissions requirements of Table 100-6 under the following conditions:
- for measurements below 600 MHz and outside the encompassed spectrum when the active OFDM channels are contiguous or when the ratio of modulated spectrum to gap spectrum within the encompassed spectrum is 4:1 or greater. Gap spectrum is spectrum between active OFDM channel's occupied spectrum and excluded bands within OFDM channel's occupied spectrum.
- in gap spectrum between OFDM channels of at least 6 MHz and gap spectrum within OFDM channels of at least 8 MHz, except for the 1 MHz of excluded subcarriers on each edge of any exclusion band, with relaxations as described in the following paragraphs when applicable.

Search the section for "hidden" requirements and reword accordingly (i.e., include in above global requirement or reword so they are clearly not a requirement). For example on pg 97 line 9 has the text "the equipment has to meet spurious emissions requirements" which appears to be implying a requirement but does not follow correct 802.3 form.

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.
but put each SHALL into the PICS rather than re-word the text. The text has different requirement cases that should be enumerated separately.
<table>
<thead>
<tr>
<th>CI</th>
<th>SC</th>
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</table>

**Comment Type**: TR  **Comment Status**: D

The Editor shall remove the "MUST" in "The CLT MUST provide for independent selection of center frequency with the ratio of number of active channels to gap spectrum in the encompassed spectrum being at least 2:1."

More importantly what is meant by "active channels"? We only have a maximum of 5 active OFDM channels and there can be many more excluded bands (which if I read pg 96 line 12 qualifies as a "Gap") so this 2:1 ratio will be very hard to maintain if this is the intention.

**Suggested Remedy**
Clarify the sentence removing the MUST.

**Proposed Response**
PROPOSED ACCEPT IN PRINCIPLE.
Change: "The CLT MUST provide" to "The CLT shall provide"
Change: "number of active channels" to "modulated spectrum"

<table>
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</tbody>
</table>

**Comment Type**: TR  **Comment Status**: D

"In the rest of the spectrum" Really? Everything outside what is described in the previous two para? From here to infinity and beyond!

**Suggested Remedy**
Clarify what is meant by "In the rest of the spectrum" so it is bounded.

**Proposed Response**
PROPOSED REJECT.
Feedback to Buzz: upstream spectrum is defined in Table 100-11. This is the passband and defines the "rest of the spectrum".

<table>
<thead>
<tr>
<th>CI</th>
<th>SC</th>
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<td>Remein, Duane</td>
<td>Huawei Technologies</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Comment Type**: TR  **Comment Status**: D

Conflicting definitions
Eq 101-13 and 100-17 both purport to define the ungainly variable "Under-grant Hold Bandwidth"

**Suggested Remedy**
Rationalize the two definitions.

**Proposed Response**
PROPOSED ACCEPT IN PRINCIPLE.
Reject.
Eq 101-13 doesn't relate to the topic of spurious noise emissions, otherwise AIP Page 101 line 21 through line 31: Change "Under-grand Hold Bandwidth" to "Under-grand Hold Subcarriers"

<table>
<thead>
<tr>
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<th>SC</th>
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</table>

**Comment Type**: TR  **Comment Status**: D

"Grant Bandwidth" which is written as a variable
1) is an Undefined term
2) Crosses a line

**Suggested Remedy**
Define and avoid line feeds in variables.

**Proposed Response**
PROPOSED ACCEPT IN PRINCIPLE.
Fix the line cross problem. Grant Bandwidth should be "Grant Spectrum". Add a definition for "grant spectrum" into Clause 100.2.9.5.2: "<citab>Grant Spectrum</citab> is the spectrum of the grant (number of resource blocks multiplied by the bandwidth of a single RB) allocated to a CNU in a given RB Frame (see 101.4.3.3.1). <citab>Grant Spectrum</citab> may vary from one RB Frame to another. <citab>100% Grant Spectrum</citab> is the bandwidth of the entire upstream transmission resource, which occurs with probes, which incorporate all resource blocks and unused subcarriers."
This section contains four shalls with no PIC entry.

Suggested Remedy:
- Remove "shall" or create a PICS statement for each.

Proposed Response:
- PROPOSED ACCEPT IN PRINCIPLE.
- Add PICS entries.

The statement implies there is a way to specify which CNU the CLT is to collect RxMER measurements for but there is no Cl 45 register for this purpose.

Suggested Remedy:
- Add section 100.2.11.1 Variables.
- Move definition of RxMER_SC(n) and RxMER_Valid from 100.2.12.3.1 to new section 100.2.11.1
- Change the definition of RxMER_Valid from:
  "... for the OFDM channel indicated by RxMER_ChID ..." to
  "... for the CNU indicated by RxMER_CNU_ID or the OFDM channel indicated by RxMER_ChID ..."
- Add new variable:
  "RxMER_CNU_ID
  TYPE: unsigned 14-bit integer
  This variable identifies the CNU on which to measure the RxMER in the CLT. When set in the CLT the values in RxMER_SC(n) will reflect the measurements of the CNU whose CNU_ID matches RxMER_CNU_ID when RxMER_Valid goes TRUE. In the CNU this variable is read only and will always have a value of one."
- Add row to Table 100-1
  MER measurement CNU ID | 10GPASS-XR receive MER Control | 12.10241.14:0 |
  RxMER_CNU_ID | 11241 | 14:0
- Change 45.2.7a.5 accordingly (Reg 10242 through 12.12287, SC 4 & 5 vs 2 & 3)
Proposed Response

PROPOSED ACCEPT IN PRINCIPLE.

As per suggest remedy with following caveats:

Suggest change: "This variable identifies the CNU on which to measure the RxMER in the CLT." to "This variable identifies for the CLT the CNU for which the CLT is to measure the upstream RxMER."

Comment Status: D
Comment Type: TR

Suggested Remedy

Add line 3 "(i.e., all OFDM channels operating over the entire frequency band specified in Table 100-3)"

change remaining 3 instances of "spectrum" to "occupied spectrum"

Proposed Response

PROPOSED ACCEPT IN PRINCIPLE.

Add as footnote to "fully loaded spectrum":

The error rate requirements are levied on an individual channel. Those requirements must be met with that channel operating in isolation and up to including all of the other channels being operated. This is what is meant by "Up to fully loaded spectrum".

Change all "spectrum" to "modulated spectrum" in the dashed list.

Proposed Response

PROPOSED ACCEPT IN PRINCIPLE.

Presumably the first sentence is referring to the specified limit for port muting.

Secondly the 2nd sentence contradicts the first which clearly states that this "applies with all active OFDM channels commanded to the same transmit power level". How can "Commanding a reduction in the transmit level of any, or all but one, of the active OFDM channels" also apply?

Suggested Remedy

Change

Change the first sentence to read:

"The specified limit for RF output port muting applies when all active OFDM channels or all active OFDM channels except one are commanded to the same transmit power level."

Strike the 2nd sentence.
IEEE 802.3bn EPON Protocol over Coax (EPoC) TF Initial Working Group ballot comments

Draft 2.0

Proposed Responses

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<th>Upstream power reporting</th>
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<tr>
<td>100</td>
<td>100.3.2</td>
<td>118</td>
<td>12</td>
<td>3933</td>
<td>Lines 12-18 define requirements against the CNU and should not be located in the test and measurements section. Also there are two requirements here and only one is listed in the PICS. Do we really need to define a variable name (RxMER_mean, RxMER_std &amp; delta_RxMER which are not in the proper format) for such common mathematical entities as the mean and standard deviation? Lastly it strikes me as odd that there are only requirements for the CNU and none for the CLT.</td>
<td></td>
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</tbody>
</table>

**Proposed Remedy**

Change the last sentence of last bullet from:

“The mean, RxMER_mean in dB, and standard deviation, RxMER_std in dB, are computed over the M measurements at both CNR values. The statistical computations are performed directly on the dB values.”

To

“The mean and standard deviation (in dB) of the RxMER measurements are computed over the M measurements at both CNR values. The statistical computations are performed directly on the dB values.”

Strike lines 12-18

In 100.2.12.3 pg 114 line 45-46 add:

“The CNU shall provide RxMER measurements with a standard deviation of <= 0.5 dB under the specified conditions specified in 100.3.2. The difference between the RxMER mean measure at CNR = 35 dB and the mean measure at CNR = 30 dB shall be between 4 dB and 6 dB when measured under he specified conditions specified in 100.3.2.”

Why there is no complementary specification for RxMER measured at the CLT is beyond my scope but should be addressed by the TF.

**Proposed Response**

**Response Status** W

PROPOSED REJECT.

The prior decision of the TF was to move anything related to test (and “performance under specified conditions”) into 100.3. These test sections do have requirements. Section 100.3.2 is about CNU MER testing, doesn't include any CLT requirements. RxMER_mean, RxMER_std, and delta_RxMER need not be formalized into official variables, as they are used to specify the nature of the CNU's providing RxMER measurements. Technical contributions are welcome for CLT RxMER “testing” requirements, otherwise see 100.2.11.

<table>
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<th>Comment Status</th>
<th>D</th>
<th>PROPOSED ACCEPT IN PRINCIPLE.</th>
</tr>
</thead>
</table>
| 100 | 100.3.3 | 118 | 20 | 3934 | A number of issues in this section:

1) which "upstream channel power metric" does this refer to?
2) assuming this power metric is to be reported there is no variables defined to use and nothing in CI 45 to do this.
3) is "for a single specified upstream user" the same as a CNU?
4) there is no variable defined here or in CI 45 to "provide configurable averaging over a range at least including 1 to 32 probes"
5) This appears to be a CLT requirement (something the CLT is required to do) not a test requirement (something to be done in a lab, verification of the capability is done in a lab environment but that is not unusual). 6) Why is this statement here? While digital power measurements are inherently accurate, the measurement referred to the analog input depends on available calibration accuracy.

**Proposed Remedy**

Move this entire section to new section 100.2.10.3. In the moved text:

Change:

“upstream channel power metric” to
"Upstream received power measurement (RxPwr)"

Change:

"for a single specified upstream user" to
"for a single specified CNU"

Strike the statement "While digital power measurements ... calibration accuracy."

Change the "should’s in the 2nd para to definitive statements such as The CLT provides ..."

Create and define new variables;
RxPwr (8-bit integer?) defined appropriately
RxPwr_CNUI_D (14-bit integer) defined appropriately
RxPwrAve (5-bit integer) defined appropriately
RxPwrValid (Boolean) defined appropriately

Create new register set in Cl 45 (1.1958 and 1.1959 should work), define and assign bits appropriately

Update Table 100-1 appropriately

Update PICS with new clause number

**Proposed Response**

**Response Status** W

PROPOSED REJECT.

The prior decision of the TF was to move anything related to test (and “performance under specified conditions”) into 100.3. These test sections do have requirements. Section 100.3.2 is about CNU MER testing, doesn't include any CLT requirements. RxMER_mean, RxMER_std, and delta_RxMER need not be formalized into official variables, as they are used to specify the nature of the CNU's providing RxMER measurements. Technical contributions are welcome for CLT RxMER “testing” requirements, otherwise see 100.2.11.

**Proposed Response**

**Response Status** W

PROPOSED ACCEPT IN PRINCIPLE.

Leave as 100.3.3 as this is a test subclause and needs to remain in 100.3 as per line 32. Upstream reported power needs to be added and aligned with comment #3904. Otherwise, as per comment.
<table>
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<tr>
<td></td>
<td></td>
<td>E</td>
<td>D</td>
<td>Specifically stating the number of new rows in probably not a good idea as it is likely to get out of sync with the draft.</td>
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<tr>
<td></td>
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<td></td>
<td></td>
<td>Proposed Remedy</td>
<td>Remove &quot; 30&quot; from editing instruction, (add &quot;in Table 45-3&quot; after &quot;below it so Editing Instruction reads: &quot;Change the identified reserved row and insert new rows below it in Table 45-3 as follows (unchanged rows not shown).&quot;&quot;)</td>
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<tr>
<td></td>
<td></td>
<td>E</td>
<td>D</td>
<td>Incomplete sentence: &quot;When bit 1.1900.2 is used to control marking of frames with CRC40 errors to higher layers as described in 101.3.3.1.4.&quot;</td>
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<td></td>
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<td></td>
<td>Proposed Remedy</td>
<td>Strike the &quot;When&quot;</td>
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<td></td>
<td></td>
<td>E</td>
<td>D</td>
<td>Missing &quot;the variable&quot; before RBsize</td>
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<td></td>
<td>E</td>
<td>D</td>
<td>What?</td>
<td>&quot;When bit this variable is set&quot;</td>
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<table>
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<tr>
<td></td>
<td></td>
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<td>D</td>
<td>More accurately &quot;the OFDM descriptor&quot; is &quot;OFDM DS profile descriptor&quot;</td>
<td>Proposed Remedy</td>
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<td>D</td>
<td>&quot;part&quot; s/b &quot;parts&quot;</td>
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</table>
IEEE 802.3bn EPON Protocol over Coax (EPoC) TF Initial Working Group ballot comments

Proposed Responses

**Comment ID** 3941

- **Comment Type**: E
- **Comment Status**: D
- **Proposed Response**: 
  - **Comment**: Stray "." in "initiated.and"
  - **Suggested Remedy**: Replace with space
  - **Response Status**: W
  - **PROPOSED ACCEPT.**

**Comment ID** 3942

- **Comment Type**: E
- **Comment Status**: D
- **Proposed Response**: 
  - **Comment**: Check the characters that can precede a line break in each clause:
  - **Suggested Remedy**: Choose Format > Document > Text Options
  - **Response Status**: W
  - **PROPOSED ACCEPT.**

**Comment ID** 3943

- **Comment Type**: E
- **Comment Status**: D
- **Proposed Response**: 
  - **Comment**: In Fig 102-3 "Frame Timing" and "EPoC Variables" are not strictly functional blocks and should not have boxes around them. Likewise in Fig 102-4.
  - **Suggested Remedy**: Remove boxes from Frame Timing and EPoC Variables. Consider matching case (all caps) for these and other analogous items in Fig 100-2/3/4/5.
  - **Response Status**: W
  - **PROPOSED ACCEPT.**

**Comment ID** 3944

- **Comment Type**: E
- **Comment Status**: D
- **Proposed Response**: 
  - **Comment**: This title seems a bit odd for a PMD clause and does not match the para text.
  - **Suggested Remedy**: Change from "Mapping of PCS, and PMA variables" to "Mapping of PMD variables"
  - **Response Status**: W
  - **PROPOSED ACCEPT.**

**Comment ID** 3945

- **Comment Type**: E
- **Comment Status**: D
- **Proposed Response**: 
  - **Comment**: Title and Headings in Table 100-1 (and 101-1 and 102-3) could be more accurate.
  - **Suggested Remedy**: Change the title to each table to "MDIO register to PHY variable mapping"
  - **Response Status**: W
  - **PROPOSED ACCEPT.**

**Comment ID** 3946

- **Comment Type**: E
- **Comment Status**: D
- **Proposed Response**: 
  - **Comment**: The ref. para 77.2.2.1 then points to 64.2.2.1. A reference to a reference makes no sense.
  - **Suggested Remedy**: Change 77.2.2.1 to 64.2.2.1
  - **Response Status**: W
  - **PROPOSED REJECT.**
  - **Comment**: We decided in a prior comment round discussion that P802.3bn cross references the 10G EPON clauses, regardless of what those clause reference.
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<td>Huawei Technologies</td>
<td>E</td>
<td>D</td>
<td>PROPOSED ACCEPT.</td>
</tr>
</tbody>
</table>

**Comment:** Much of this register is status; this should be reflected in its name.

**Suggested Remedy:**
- Change in 9 places:
  - *10GPASS-XR control* to *10GPASS-XR control and status*
- Table 45–3 1x
- Cl 45.2.1.131 3x
- Table 101–1 2x
- Table 102–3 3x

**Proposed Response:** PROPOSED ACCEPT.

<table>
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<td>Huawei Technologies</td>
<td>E</td>
<td>D</td>
<td>PROPOSED ACCEPT IN PRINCIPLE.</td>
</tr>
</tbody>
</table>

**Comment:** The lawyer who wrote this section added an extraneous OFDM I believe in:
*"For the measurement OFDM channels adjacent to a contiguous block of channels, ... "* The sentence refers to a measurement channel not an OFDM channel.

**Suggested Remedy:**
- Strike the extraneous OFDM

**Proposed Response:** PROPOSED ACCEPT IN PRINCIPLE.
- To maintain parallel construction with the second sentence: Change "For the measurement OFDM channels " to "For a measurement channel ".

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<td>Huawei Technologies</td>
<td>E</td>
<td>D</td>
<td>PROPOSED ACCEPT.</td>
</tr>
</tbody>
</table>

**Comment:** "Spur Floor" should be "SpurFloor" (and in italics)

**Suggested Remedy:**
- per comment

**Proposed Response:** PROPOSED ACCEPT.

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<td>Huawei Technologies</td>
<td>E</td>
<td>D</td>
<td>PROPOSED ACCEPT.</td>
</tr>
</tbody>
</table>

**Comment:** Reference to "calculated as above," which above, there are lots of calculations above to choose from.

**Suggested Remedy:**
- Provide a specific reference to a section or table.

**Proposed Response:** PROPOSED ACCEPT.
IEEE 802.3bn EPON Protocol over Coax (EPoC) TF Initial Working Group ballot comments

Proposed Responses

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<td>11</td>
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<td>In all the following formulas &quot;used in the following formula&quot;? Even in those of other clauses to be defined in some far distant future?</td>
<td>E</td>
<td>D</td>
<td>Change to specific reference such as &quot;use in Equation 100-19 and Equation 100-20&quot;</td>
<td>W</td>
</tr>
<tr>
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<td>100.2.9.6.1</td>
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<td>23</td>
<td></td>
<td>Mnemonic &quot;RB&quot; not defined in this context. &quot;MER per RB ...&quot;</td>
<td>E</td>
<td>D</td>
<td>replace with &quot;resource block&quot;</td>
<td>W</td>
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<td></td>
<td>Which spec? There are many many specs of dust to choose from!</td>
<td>E</td>
<td>D</td>
<td>As per comment, also italicize &quot;RBMER&quot; in sentence.</td>
<td>W</td>
</tr>
</tbody>
</table>

Comment ID 3955 Page 82 of 124

TYPE: TR/technical required ER/editorial required GR/general required T/technical E/editorial G/general
COMMENT STATUS: D/dispatched A/accepted R/rejected RESPONSE STATUS: O/open W/written C/closed U/unsatisfied Z/withdrawn
SORT ORDER: Comment ID

9/8/2015 6:20:55 PM
Proposed Responses

### Comment ID 3956

**Comment Type:** ER  
**Comment Status:** D  
**Proposed Response**

There are 598 instances of “channel” in the draft. 319 are preceded by OFDM and 24 by OFDMA, the remaining 255 should be checked by the editors to see if the it is clear precisely which channel is being referred to.

**Suggested Remedy**

Where necessary clarify with one of the following:

- “OFDM” (ex Cl 45.2.7a.5.1 pg 62 ln 10)
- “the channel indicated” -> “the OFDM channel indicated”
- “OFDMA” (no ex found)
- “baseline” (ex as in Cl 100.2.6 pg 88 ln 28)
- “gap” (ex as in Table 100-5 note pg 95 ln 44)
- “equivalent 6 MHz” (ex as in Table 100-3 Pg 93 ln 5)

(The Editors are invited to add additional qualifying words as needed.)

The end result is that nearly all 598 instance have some qualifier.

*** Change to Cl 00 before bring accepted by TF. ***

**Proposed Response**

PROPOSED ACCEPT IN PRINCIPLE.

P802.3bn is consistent with the definition of “channel” in the 802.3 definitions, so extra qualification of “OFDM” or “OFMDA” only where it really needs to be done.

### Comment ID 3957

**Comment Type:** ER  
**Comment Status:** D  
**Proposed Response**

“The CNU updates its reported power per channel in each channel by the following steps” but the CNU only has one OFDMA channel.

**Suggested Remedy**

Change to:

“The CNU updates its reported power by the following steps”

**Proposed Response**

PROPOSED ACCEPT.

Page 102, Line 11, change “measurementBW” to “Measurement Bandwidth”. Add sentence after line 11 formula, “where <ital>Measurement Bandwidth</ital> value is defined in Table 100-8 and Table 100-9.”.

In formula on line 11, replace “10% modulated spectrum” with “(100% Grant Spectrum / 10)”.

In other listed places change “measurement bandwidth” to “Measurement Bandwidth”.

Page 101, line 38, add “(see Table 100-8 and Table 100-9)” to end of sentence.

### Comment ID 3959

**Comment Type:** ER  
**Comment Status:** D  
**Proposed Response**

This statement strikes me as odd “Table 100-8 lists the required spurious level in a measurement interval.” I would expect that if I can by some miracle be able to make a transmitter without any spurious levels I am not allowed to do so. :-(

A similar issues exists at SCL 100.2.9.5.3 pg 104 line 41 “Table 100-8 lists the required adjacent channel spurious emission levels when there ...”

**Suggested Remedy**

Change the statement to read: “Table 100-8 lists the allowed spurious emissions for Under-grant Hold Bandwidth conditions.”

**Proposed Response**

PROPOSED ACCEPT.
Proposed Response
Response Status W
PROPOSED ACCEPT IN PRINCIPLE.
Change to unnumbered equations. (that is what they are...)

Proposed Response
Response Status W
PROPOSED ACCEPT.

Proposed Response
Response Status W
PROPOSED ACCEPT.

Proposed Response
Response Status W
PROPOSED ACCEPT.

Proposed Response
Response Status W
PROPOSED ACCEPT.
IEEE 802.3bn EPON Protocol over Coax (EPoC) TF Initial Working Group ballot comments

**Comment ID: 3964**

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<td>100.2.7.3</td>
<td>90</td>
<td>50</td>
<td>3964</td>
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</tbody>
</table>

Remain, Duane
Huawei Technologies

**Comment Type:** T
**Comment Status:** D

While the bit definition allows for a SC0 center freq of 0 MHz the minimum value of 100 does not. Note also that this is a variable not a register.

"This definition equates to a subcarrier 0 center frequency of from 0 MHz to 3276.75 GHz. The minimum value for this register is 100."

Also 3276.75 GHz seems a bit high.

**Proposed Remedy**

Change to read:

"The minimum value for this variable is 100. This definition equates to a subcarrier 0 center frequency of from 5 to 3276.75 MHz.

**Proposed Response**

**Response Status:** W

PROPOSED ACCEPT IN PRINCIPLE.

Line 50: "Change OFDM" to "OFDMA".
Otherwise, the bottom edge of upstream was changed from 5.0 MHz to 7.4 MHz (due to IDFT subcarrier use) in a prior comment round. Adjust the remedy to accommodate starting at 7.4 MHz.

**Comment ID: 3965**

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<td>49</td>
<td>3965</td>
</tr>
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</table>

Remain, Duane
Huawei Technologies

**Comment Type:** T
**Comment Status:** D

This level of detail is not needed as the ruling definition is in 100.2.7.3.

**Proposed Remedy**

Strike:

"Subcarriers are numbered from 0 to 4095 with subcarrier 0 at the lowest frequency. This definition equates to a center frequency from 0 MHz to 3.27875 GHz in 50 kHz steps. The minimum value for this register is 100."

so the statement reads:

"Register 1.1908 indicates the center frequency of subcarrier 0 for the upstream OFDM channel. This register is a reflection of the variable US_FreqCh1 defined in 100.2.7.3."

In Table 45-98 strike "in steps of 50 kHz"

**Proposed Response**

**Response Status:** W

PROPOSED ACCEPT.

**Comment ID: 3967**

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<td>45.2.1.149</td>
<td>48</td>
<td>49</td>
<td>3967</td>
</tr>
</tbody>
</table>

Remain, Duane
Huawei Technologies

**Comment Type:** T
**Comment Status:** D

This definition of FEC codeword counter does not match the variable it is intended to reflect FecCodeWordCount defined in 101.3.3.1.6

Here we define a non-rollover clear on read variable whereas in 101.3.3.1.6 FecCodeWordCount is described as rollover counter.

The same is true for45.2.1.150 10GPASS-XR FEC codeword success and 45.2.1.151 10GPASS-XR FEC codeword fail.

**Proposed Remedy**

PROPOSED ACCEPT IN PRINCIPLE.

Change FEC codeword counter, FEC codeword counter success, and FEC codeword counter fail to normal counters (not clear on read, non-rollover) in clause 45.
IEEE 802.3bn EPON Protocol over Coax (EPoC) TF Initial Working Group ballot comments

**Proposed Responses**

### Comment ID 3968

**Comment Type**: T
**Comment Status**: D

Remein, Duane
Huawei Technologies

**Comment Type**: T
**Comment Status**: D

Normative shall's not needed here as ruling definition is in 102.2.6.2. The same is true for:
- 45.2.1.153 PHY Link EPFH error counter,
- 45.2.1.154 PHY Link EPCH counter,
- 45.2.1.155 PHY Link EPCH error counter,
- 45.2.1.156 PHY Link EMB counter,
- 45.2.1.157 PHY Link EMB error counter,
- 45.2.1.158 PHY Link FPMB counter, and
- 45.2.1.159 PHY Link FPMB error counter

**SuggestedRemedy**

Remove the "shall's from these sections. for example change:

"The assignment of bits in the PHY Link EPFH counter is shown in Table 45–98v. This register shall be reset to all zeros when read by the management function or upon PHY reset. These bits shall be held at all ones in the case of overflow. This register is a reflection of the counter EPFHcnt defined in 102.2.6.2."

To:

"The assignment of bits in the PHY Link EPFH counter is shown in Table 45–98v. This register is reset to all zeros when read by the management function or upon PHY reset. These bits are held at all ones in the case of overflow. This register is a reflection of the counter EPFHcnt defined in 102.2.6.2."

**Proposed Response**

PROPOSED ACCEPT.

### Comment ID 3969

**Comment Type**: T
**Comment Status**: D

Remein, Duane
Huawei Technologies

**Comment Type**: T
**Comment Status**: D

The description for bits 1.1951.15:8 in Table 45-98ag leave much to be desired.

**SuggestedRemedy**

Change table entry to read:

"indicate the power increase of the PHY Discovery Response if there is no acknowledgment"

**Proposed Response**

PROPOSED ACCEPT.

### Comment ID 3970

**Comment Type**: T
**Comment Status**: D

Remein, Duane
Huawei Technologies

**Comment Type**: T
**Comment Status**: D

Is it really proper to refer to "One coaxial cable connected to a CCDN"? We do not refer to One single mode fiber connected to a PON for EPON.

**SuggestedRemedy**

Change to "one CCDN"

**Proposed Response**

PROPOSED ACCEPT.

### Comment ID 3971

**Comment Type**: T
**Comment Status**: D

Remein, Duane
Huawei Technologies

**Comment Type**: T
**Comment Status**: D

"Burst_Time_Header()" in state AGGREGATE_BURST_TIME_HEADER is undefined. However BurstTimeHeader() is.

**SuggestedRemedy**

Change to "BurstTimeHeader() in SD.

**Proposed Response**

PROPOSED ACCEPT.
IEEE 802.3bn EPON Protocol over Coax (EPoC) TF Initial Working Group ballot comments

Proposed Responses

Proposed Response

Cl 45 SC 45.2.1.4 P 34 L 48 # 3972
Marris, Arthur
Cadence Design Syste

Comment Type T Comment Status D

No description of "10GPASS-XR capable" bit

SuggestedRemedy

802.3by is using 45.2.1.4.a so add the following:

Insert new subclause 45.2.1.4.b before 45.2.1.4.1 as follows:

45.2.1.4.b 10GPASS-XR capable (1.4.10)
When read as a one, bit 1.4.11 indicates that the PMA/PMD is able to operate as 10GPASS-XR. When read as a zero, bit 1.4.10 indicates that the PMA/PMD is not able to operate as 10GPASS-XR.

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.
Add new editing instruction pg 34 line 46:
"Insert 45.2.1.4.a after 45.2.1.4.1 (as inserted by IEEE Std 802.3by-201x) as follows:"

Add subclause 45.2.1.4.b

*45.2.1.4.b 10GPASS-XR capable (1.4.10)
When read as a one, bit 1.4.10 indicates that the PMA/PMD is able to operate as 10GPASS-XR. When read as a zero, bit 1.4.10 indicates that the PMA/PMD is not able to operate as 10GPASS-XR."

Cl 01 SC 1.5 P 27 L 25 # 3973
Victor Hou
Broadcom Corporation

Comment Type E Comment Status D

Definition of abbreviation HFC is not correct.

SuggestedRemedy

The definition should be "Hybrid Fiber Coax", not "Hybrid Fiber Coax Network."

Proposed Response Response Status W

PROPOSED ACCEPT.
IEEE 802.3bn EPON Protocol over Coax (EPoC) TF Initial Working Group ballot comments

Proposed Response

CI: 01 SC 1.4.144a P 26 L 20 #3977
Booth, Brad Microsoft

Comment Type E Comment Status D

Definition does not follow typical format.

Also applies to 1.4.144b and c.

Suggested Remedy

Change to read:
1.4.144a coax cable distribution network (CCDN):...
1.4.144b coax line terminal (CLT):...
1.4.144c coax network unit (CNU):...

PROPOSED ACCEPT.

Comment ID 3977

CI: 00 SC 45.2.1 P 33 L 12 #3979
Booth, Brad Microsoft

Comment Type E Comment Status D

Overuse of the US and DS acronyms. While acronyms are easily understood by those working closely with the draft, the DS and US terms can create confusion (is US the USA?).

See Table 75B-1 for how US and DS were used.

Suggested Remedy

Change DS to be downstream and US to be upstream.

Change in the registers and other tables in Clause 45. Review EPoC clauses to ensure the use of the terms are easily understood.

PROPOSED ACCEPT IN PRINCIPLE.

Changed from Cl 45 to Cl 00.

Most of the 585 instances of "DS" and 430 instances of "US" occur in variable names or register names. In such cases no changes will be made.

In cases where these acronyms obscure in subclause titles or para text these will be changed to upstream and downstream as requested.

Comment ID 3979

CI: 01 SC 1.4.294a P 26 L 47 #3978
Booth, Brad Microsoft

Comment Type E Comment Status D

Don't use the acronym in the definition.

Also applies to 1.4.345a.

Suggested Remedy

Change to read:
1.4.294a orthogonal frequency division multiplexing (OFDM) channel:...
1.4.345a quadrature amplitude modulation (QAM) symbol:...

PROPOSED ACCEPT IN PRINCIPLE.

OFDM channel is used extensively in the draft (appears >250x). Thus it is probably a good thing to keep in the definitions list.

Change 1.4.294a to read:
1.4.294a OFDM channel: see 1.4.306a orthogonal frequency division multiplexing (OFDM) channel.
Add 1.4.306a
Insert the following definition after 1.4.306 "Organizationally Unique Identifier (OUI)" as follows:
1.4.306a orthogonal frequency division multiplexing (OFDM) channel: ... * using definition from current 1.4.294a

Change 1.4.345a as suggested.

Comment ID 3978

CI: 00 SC 101.3.3.1.8 P 163 L 19 #3980
Booth, Brad Microsoft

Comment Type E Comment Status D

Figures 101-13 and 101-14 don't follow required format and are hard to read.

Suggested Remedy

Correct to use the proper font (Helvetica, Arial) in the figures. Align text blocks so that the words don't touch the lines.

PROPOSED ACCEPT IN PRINCIPLE.

Per IEEE Style guide fonts in graphic are to be either Times New Roman or Arial. Most SD in the current STD are in Arial. P802.3bn will use Arial (9 pt preferred) for SD.

Comment ID 3980

Page 88 of 124
9/8/2015 6:20:55 PM
Cl 101 SC 101.4.3.3.6 P 201 L 1 # 3981
Booth, Brad Microsoft

Comment Type E  Comment Status D EZ
Figure 101-29 font size is inconsistent with previous figures.

SuggestedRemedy
Correct the font size.

Proposed Response Response Status W
PROPOSED ACCEPT.
Per IEEE Style guide fonts in graphic are to be either Times New Roman or Arial. Most SD in the current STD are in Arial. P802.3bn will use Arial (9 pt preferred) for SD.

Cl 102 SC 102.4.1.8.7 P 276 L 5 # 3982
Booth, Brad Microsoft

Comment Type E  Comment Status D EZ
Figure 102-24, 102-29 and 102-30 are inconsistent in the font style and hard to read.

SuggestedRemedy
Change to use the correct font. Fix the boxes to remove overhangs and thick lines.

Proposed Response Response Status W
PROPOSED ACCEPT.
Per IEEE Style guide fonts in graphic are to be either Times New Roman or Arial. Most SD in the current STD are in Arial. P802.3bn will use Arial (9 pt preferred) for SD.

Cl 01 SC 1.4.345a P 27 L 3 # 3983
Booth, Brad Microsoft

Comment Type T  Comment Status D EZ
As this is an amendment to the 802.3, this draft standard will become part of the whole 802.3; therefore, using terms like "In EPoC, this term..."

SuggestedRemedy
Change definition to read:
"The amplitude-phase representation of the bits of data that modulate a carrier signal or that modulate each of the OFDM subcarriers."

Proposed Response Response Status W
PROPOSED ACCEPT IN PRINCIPLE.
To parallel US_FreqCh1, change "the OFDM channel n" to "downstream OFDM channel n".

Cl 100 SC 100.2.7.3 P 90 L 42 # 3985
Szczepanek, Andre Inphi

Comment Type E  Comment Status D EZ
"OFDM channel n" would be better worded as "OFDM downstream channel n" and would be consistent with the text for US_Freq

SuggestedRemedy
Change to "OFDM downstream channel n"

Proposed Response Response Status W
PROPOSED ACCEPT.
To parallel US_FreqCh1, change "the OFDM channel n" to "downstream OFDM channel n".

Subclause did not include 100; added by editor
Proposed Response #3987

Amason, Dale  
Freescale  

Comment Type: E  
Comment Status: D  

Figure 56-4 entered twice.

Suggested Remedy:  
Replace second instance of Figure 56-4 with Figure 56-4a

Proposed Response:  
Response Status: W  
PROPOSED ACCEPT.

Proposed Response #3988

Amason, Dale  
Freescale  

Comment Type: E  
Comment Status: D  

Missing underline for added text “Clause 101”.

Suggested Remedy:  
Add underline.

Proposed Response:  
Response Status: W  
PROPOSED ACCEPT.

Proposed Response #3989

Amason, Dale  
Freescale  

Comment Type: E  
Comment Status: D  

Unnecessary comma “Mapping of PCS, and PMA variables”

Suggested Remedy:  
Remove comma.

Proposed Response:  
Response Status: W  
PROPOSED ACCEPT.

Proposed Response #3990

Amason, Dale  
Freescale  

Comment Type: E  
Comment Status: D  

Poor grammar: "shall be meet"

Suggested Remedy:  
Change to "shall meet".

Proposed Response:  
Response Status: W  
PROPOSED ACCEPT.

Proposed Response #3991

Amason, Dale  
Freescale  

Comment Type: E  
Comment Status: D  

Lone curly bracket { in "FIFO_FEC_TX{sizeFifo}".

Suggested Remedy:  
Replace with [.

Proposed Response:  
Response Status: W  
PROPOSED ACCEPT.

Proposed Response #3992

Hidaka, Yasuo  
Fujitsu Lab. of America  

Comment Type: E  
Comment Status: D  

LDCP in captions of table 101-4 and table 101-5 should be LDPC.

Suggested Remedy:  
Change LDCP in captions of table 101-4 and table 101-5 with "DPC."

Proposed Response:  
Response Status: W  
PROPOSED ACCEPT.

Proposed Response #3993

Slavick, Jeff  
Avago Technologies  

Comment Type: E  
Comment Status: D  

FIFO_FEC_TX{sizeFifo} has a { instead of [.

Suggested Remedy:  
Make the { a [.

Proposed Response:  
Response Status: W  
PROPOSED ACCEPT.
IEEE 802.3bn EPON Protocol over Coax (EPoC) TF Initial Working Group ballot comments

Proposed Responses

CI 103 SC 103.3.36 P 323 L 14 # 3994
Slavick, Jeff Avago Technologies

Comment Type TR Comment Status D
in Figure 103-18 what happens in ACCEPT_REGISTER_REQUEST if both opcode_rx=REGISTER_REQ and insideDiscoveryWindow=FALSE occur at the same time?

SuggestedRemedy
Change the path to SIGNAL state to be insideDiscoveryWindow * opcode_rx=REGISTER_REQ

Proposed Response Response Status W
PROPOSED REJECT.
This SD is an adaptation of Figure 77-20 with some minor changes such as:
laserOnTime => rfOnTime
laserOffTime => rfOffTime

Given that Fig 77-20 has been implemented numerous time and is know to function correctly it is inadvisable to change it at this time.

If the commentor believes there is an error in the two figures he is invited to submit a maintenance request against the standard.

Passed by voice without opposition
For (reject):
Against (change variable name):
Abstain:

CI 102 SC 102.4.1.8.7 P 276 L 19 # 3996
Slavick, Jeff Avago Technologies

Comment Type TR Comment Status D
In Figure 102-24 in the WAIT_FOR_BDISCWIN state you do: PdRndDly -= which is missing a value to decrement the variable by

SuggestedRemedy
Convert add the missing decrement value

Proposed Response Response Status W
PROPOSED ACCEPT IN PRINCIPLE.
s/b PdRndDly - -

CI 100 SC 3.4 P 119 L 43 # 4003
Effenberger, Frank Huawei

Comment Type E Comment Status D
There is a sentence: “The easiest way of validating that the transmitted waveform is as intended to should be employed.”
This is poorly worded.

SuggestedRemedy
Recommend replacing sentence with, “The transmitted waveform should be validated in the most practical method available.”
(However, does this sentence really add anything? It seems self-evident.

Proposed Response Response Status W
PROPOSED ACCEPT IN PRINCIPLE.
Delete this sentence.

CI 56 SC P 68 L # 4004
Effenberger, Frank Huawei

Comment Type E Comment Status D
Fig 56-4a has a box labelled "Node" in the Coax network. This is misleading, as "Node" has a very specific meaning in the HFC context. The same term is used in Fig. 100-1, 101-1, and 103-2. Those should be changed as well.

SuggestedRemedy
Replace "Node" with "splitter network".

Proposed Response Response Status W
PROPOSED REJECT.
P802.3bn is defined to also work through an HFC network, that includes a "node". Making this change would preclude this operation. The TF may want to determine a different label after discussion; e.g. "HFC Network"
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<tr>
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<td>Effenberger, Frank</td>
<td>Huawei</td>
<td>Comment Type: E</td>
<td>Comment Status: D</td>
<td>EZ</td>
<td></td>
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<tr>
<td>The phrase “Trunk and branch” is used here; however, in clause 67.2.3, the term “Tree and branch” term is used. I believe that “tree and branch” is actually the widely used term, even though it is not so correct.</td>
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<tr>
<td>Suggested Remedy: Make the terms uniform, one way or another.</td>
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<tr>
<td>Proposed Response: PROPOSED ACCEPT.</td>
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<td>Effenberger, Frank</td>
<td>Huawei</td>
<td>Comment Type: E</td>
<td>Comment Status: D</td>
<td>EZ</td>
<td></td>
</tr>
<tr>
<td>“Spurs” is used without definition, specifically “discrete spurs”.</td>
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<tr>
<td>Suggested Remedy: Define “Spur” as a shortening of “spurious emission”. Define “Discrete spur” as a “spurious emission that is contained within one subcarrier bandwidth” (Is that suitable?)</td>
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<tr>
<td>Proposed Response: PROPOSED ACCEPT IN PRINCIPLE.</td>
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<tr>
<td>Add a footnote to &quot;spurs&quot; on Line 6 as: *Discrete (narrowband) spurious emissions, such as a continuous wave (CW) sinusoid or other signal with significant power concentrated in small bandwidth. *</td>
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<td>Huawei</td>
<td>Comment Type: E</td>
<td>Comment Status: D</td>
<td>EZ</td>
<td></td>
</tr>
<tr>
<td>The composition of the CCDN is explained to be cables, taps/couplers, and (optionally) amplifiers. Might it also be mentioned that optical analogs are also possible?</td>
<td></td>
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</tr>
<tr>
<td>Suggested Remedy: Add the following phrase after amplifier, &quot;and/or analog optical links&quot;</td>
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<tr>
<td>Proposed Response: PROPOSED ACCEPT.</td>
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<td># 4008</td>
<td>42</td>
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<td>Effenberger, Frank</td>
<td>Huawei</td>
<td>Comment Type: T</td>
<td>Comment Status: D</td>
<td>EZ</td>
<td></td>
</tr>
<tr>
<td>Regarding transient spurious emissions, it says, “This requirement does not apply to CNU power-on and power-off transients.” Which requirement exactly? And, is that really true? A compliant CNU could emit a gamma ray burst of interference when I turn it on or off?</td>
<td></td>
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<tr>
<td>Suggested Remedy: At a minimum, precise what requirement is being released for the power-on/off transients. And, validate if power cycles really are exempt, because they happen, and if these transients can cause trouble, then they should not be allowed.</td>
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<tr>
<td>Proposed Response: PROPOSED ACCEPT IN PRINCIPLE.</td>
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</tr>
<tr>
<td>Line 42, change “This requirement does not apply to CNU power-on and power-off transients.” to “The transient response requirement does not apply to CNR power-on and power-off transients.”</td>
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<td>100.1.1</td>
<td>P 77</td>
<td># 4020</td>
<td>16</td>
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<td>Ran, Adee</td>
<td>Intel</td>
<td>Comment Type: E</td>
<td>Comment Status: D</td>
<td>EZ, comprised</td>
<td></td>
</tr>
<tr>
<td>“comprised of” is incorrect. comprising = composed of.</td>
<td></td>
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<td></td>
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<tr>
<td>This usage is repeated several times in the draft.</td>
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<tr>
<td>Suggested Remedy: Change &quot;comprised of&quot; to &quot;composed of&quot; or &quot;comprising&quot; throughout the draft.</td>
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<td>Proposed Response: PROPOSED ACCEPT.</td>
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<td>Page 92 of 124</td>
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<td>9/8/2015  6:20:55 PM</td>
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</table>
Proposed Responses

**Cl 100 SC 100.1.3 P 77 L 36 # 4021**

Ran, Adee Intel

Comment Type E Comment Status D intro move to 101

- subclause 100.1.3 and figures 100-2 through 100-5 seem to describe the whole PHY, not just the PMD which is the subject of clause 100.

**Suggested Remedy**

Consider adding an introduction clause to describe EPoC, OFDM, and the sublayer architecture. This subclause seems to belong there.

Alternatively, move this subclause to clause 56.

**Proposed Response** Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

Retain Figure 100-1 in Clause 100. Move subclause 100.1.3 paragraph (Page 77, lines 37 through 43) and Figure 100-2, 100-3,100-4, and 100-5 to Clause 101 after other changes have been applied. See comment #3719

---

**Cl 100 SC 100.2.1 P 85 L 50 # 4022**

Ran, Adee Intel

Comment Type E Comment Status D EZ

- There is one service interface, with multiple primitives.

**Suggested Remedy**

Change "These PMD sublayer service interfaces are" to "The service interface is".

**Proposed Response** Response Status W

PROPOSED ACCEPT.

---

**Cl 100 SC 100.2.8.5 P 96 L 3 # 4024**

Ran, Adee Intel

Comment Type E Comment Status D

This subclause contains several similar paragraphs, the differences are very difficult to discern. It seems that converting it to a table may yield shorter text and make it easier to understand the differences between cases.

**Suggested Remedy**

Consider reformatting and adding a table.

**Proposed Response** Response Status W

PROPOSED REJECT.

The original text author prefers these remain in text format. However, happy to discuss alternate response with the TF during comment resolution.

---

**Cl 45 SC 45.2 P 31 L 32 # 4025**

Ran, Adee Intel

Comment Type T Comment Status D Cl 45 Device Address

It is not clear what "OFDM" stands for in the context of MDIO. Unlike most other MMD names, there is no sublayer called OFDM. Shouldn't the OFDM control be part of the PMA/PMD?

**Suggested Remedy**

Either merge these registers into the PMA/PMD, or provide a reference to where the "OFDM" sublayer/entity is defined, or add a description in 45.2.7a.

**Proposed Response** Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

See cmt# 4064

---

**Cl 100 SC 100.2.1 P 86 L 1 # 4023**

Ran, Adee Intel

Comment Type E Comment Status D

What are "modulation symbols"? are these the QAM symbols defined in 1.4.345a?

**Suggested Remedy**

Rephrase to clarify, or add appropriate definition.

**Proposed Response** Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

Change "The PMD service interface supports the exchange of a continuous stream of OFDM/OFDMA modulation symbols between the PMA and PMD entities. The modulation symbols are encoded as I / Q value pairs."

to:

"The PMD service interface supports the exchange of a continuous stream of OFDM/OFDMA time domain sampled waveform between the PMA and PMD entities. The samples are encoded as complex numbers, i.e., I / Q value pairs."

---

TYPE: TR/technical required ER/editorial required GR/general required T/technical E/editorial G/general
COMMENT STATUS: D/dispatched A/accepted R/rejected RESPONSE STATUS: O/open W/written C/closed U/unsatisfied Z/withdrawn
SORT ORDER: Comment ID
IEEE 802.3bn EPON Protocol over Coax (EPoC) TF Initial Working Group ballot comments

Proposed Responses

Comment #4026

Comment Type: T
Comment Status: D

Proposed Response:

Cl 01 SC 1.4.345a P 27 L 4 # 4026
Ran, Adee Intel

Definition of QAM symbol uses the term "OFDM subcarrier" which is not defined.

Likewise, "OFDM channel" (1.4.294a) uses the term "QAM subcarrier" which is not defined, but may be understood from the context.

The final part of the sentence "or, in OFDM, that modulate each of the OFDM subcarriers" does not seem necessary for the definition of "QAM symbol".

Suggested Remedy:

Change "OFDM subcarrier" here to "QAM subcarrier".

Alternatively, remove "or, in OFDM, that modulate each of the OFDM subcarriers".

PROPOSED ACCEPT IN PRINCIPLE.

See cmt 3983

Comment #4027

Comment Type: T
Comment Status: D

Proposed Response:

Cl 100 SC 100.1.5 P 83 L 16 # 4027
Ran, Adee Intel

"Mapping of PCS, and PMA variables" does not seem to belong in the PMD clause. Is it really the PCS/PMA? line 20 and table headings refer to PMD, so I'm confused.

Suggested Remedy:

If this is then an error in the title, correct the title.

If the title is correct, then this subclause should be part of clause 101.

PROPOSED ACCEPT IN PRINCIPLE.

Title was change in Comment #3944 which addresses this comment.

Comment #4028

Comment Type: T
Comment Status: D

Proposed Response:

Cl 100 SC 100.2.1.2 P 86 L 28 # 4028
Ran, Adee Intel

MHz is a measure of frequency. This seems to be a signaling rate, measured in Baud. "speed" is incorrect.

Suggested Remedy:

Change "nominal speed of 204.8 MHz" to "nominal rate of 204.8 MBd".

Correct in other places as necessary.

PROPOSED ACCEPT IN PRINCIPLE.

Change to "Mbps" (million samples per second). Also change in all uses.

PROPOSED ACCEPT IN PRINCIPLE.

See comment #4023

Comment #4029

Comment Type: T
Comment Status: D

Proposed Response:

Cl 100 SC 100.2.1.2 P 86 L 45 # 4029
Ran, Adee Intel

This paragraph and the following one (P89 L1) seems badly phrased and/or punctuated. I can't understand what it says.

Does "channels" refer to OFDM channels?

Suggested Remedy:

Rephrase and punctuate, use concise and well-defined terms.

PROPOSED ACCEPT IN PRINCIPLE.

See comment #4023
I was not aware until now that the term "channel" had such a limited definition in 802.3. This term is used in many places in 802.3 and also has a meaning in communication engineering that is beyond the definition used here.

These definitions also go into the IEEE standards dictionary so should be precise and unambiguous. Unfortunately clause 11 can only be changed through maintenance.

This is also confusing since "OFDM channel" is also defined and it seems that in some cases (e.g. in 100.2.6.1) "channel" may refer to an OFDM channel. Also in use is "6 MHz channel" which is sometimes "6 MHz band". This inconsistency could result in a lot of more specific comments.

Please use a more specific term in this project instead of re-using this way too overloaded term.

Suggested Remedy

Add a more specific definition such as "RF channel" or "EPoC channel" and use it instead where necessary.

Make sure that "channel" is always qualified correctly in clause 100, and reconcile usage of "band".

PROPOSED ACCEPT IN PRINCIPLE.

The term channel appears 598 times in the draft. 319 times it is preceded by "OFDM" and 24 times it is preceded by "OFDMA".

Where appropriate the word "OFDM" or OFDMA will be added to describe "channel" (for example on pg 62 lines 45-50 in 2 places but not as in line 47 where "MER channel" is used, note there are 13 instances of MER channel, these shall remain as is).

In instances where the term "channel" refers to a wavelength band, as on pg 91 line 6 "the number of equivalent 6 MHz channels" the term "channel(s)" will be replaced with "RF band(s)". Note there are 29 instances of "MHz channels".

In Cl 103 "LLID" will be substituted for "channel" (3x).

All changes due to this comment are at the discretion of the Editors.
Proposed Responses

#### Comment ID: 4038

**Comment Type:** E  **Comment Status:** D  **EZ**

A few of the boxes in the figure are misaligned. For example, the box around "coax" at line 44 is a few pixels to the left of the MDI box above it.

**Suggested Remedy:**
Zoom in close and nudge the figure elements so that they line up.

**Proposed Response**
Response Status: W

PROPOSED ACCEPT IN PRINCIPLE.
We do nudge these up and Framemaker cheerfully misaligns at its whim. We will go back and re-nudge to see if it behaves this time.

#### Comment ID: 4039

**Comment Type:** E  **Comment Status:** D  **EZ**

Several misalignments in this figure: the pilot insertion boxes are all a few pixels to the left of the IFFT boxes below. The pilot insertion 1 and 5 boxes don't align with the edges of the symbol mapper box above. The arrow to the right of the Subcarrier Configuration and bit loading box doesn't go all the way to the box. The boxes around "SCRAMBLER" and "FCP GENERATION" are slightly different heights.

**Suggested Remedy:**
Zoom in close and tidy up the figure by nudging the elements to line up

**Proposed Response**
Response Status: W

PROPOSED ACCEPT IN PRINCIPLE.
We do nudge these up and Framemaker cheerfully misaligns at its whim. We will go back and re-nudge to see if it behaves this time.

#### Comment ID: 4040

**Comment Type:** E  **Comment Status:** D  **EZ**

Several misalignments in Figure 100-3. There is a gap between the Pre-equalization and IDFT box and the box below. The arrow below the Staging and Pilot Insertion doesn't touch the box. The tiny gap between the OFDM Frame Configuration and Bit Loading box and the Frame Timing box below should be made larger if it was intentional or eliminated if not.

**Suggested Remedy:**
Zoom in close and tidy up the figure by nudging the elements to line up

**Proposed Response**
Response Status: W

PROPOSED ACCEPT IN PRINCIPLE.
We do nudge these up and Framemaker cheerfully misaligns at its whim. We will go back and re-nudge to see if it behaves this time.

#### Comment ID: 4041

**Comment Type:** E  **Comment Status:** D  **EZ**

Similar alignment issues to previous figures: the De-interleaving 1-5 boxes don't line up with the FFT boxes below, and De-interleaving 1 and 5 boxes don't line up with the symbol mapper box above. The arrow to the right of the Subcarrier configuration and bit loading box doesn't go all the way to the box.

**Suggested Remedy**
Zoom in close and tidy up the figure by nudging the elements to line up

**Proposed Response**
Response Status: W

PROPOSED ACCEPT IN PRINCIPLE.
We do nudge these up and Framemaker cheerfully misaligns at its whim. We will go back and re-nudge to see if it behaves this time.

#### Comment ID: 4042

**Comment Type:** E  **Comment Status:** D  **EZ**

Similar alignment problems as with previous figures. There is a gap between the 64B/66B decoder box and the FEC decoder box below. The arrow from the Pilot and Marker Pattern box doesn't touch the box. The following three paragraphs isn't a good text construct for document maintenance purposes. Also, it is presumably the three paragraphs plus (or including) Table 100-6.

**Suggested Remedy**
Put the referenced material in its own subclause and reference it by number

**Proposed Response**
Response Status: W

PROPOSED ACCEPT IN PRINCIPLE.
We do nudge these up and Framemaker cheerfully misaligns at its whim. We will go back and re-nudge to see if it behaves this time.

#### Comment ID: 4043

**Comment Type:** E  **Comment Status:** D  **EZ**

"The following three paragraphs" isn't a good text construct for document maintenance purposes. Also, it is presumably the three paragraphs plus (or including) Table 100-6.

**Suggested Remedy**
Put the referenced material in its own subclause and reference it by number

**Proposed Response**
Response Status: W

PROPOSED ACCEPT IN PRINCIPLE.
Draft text rearrangement is being worked on. Draft replacement text will be provided in laubach_3bn_12_0915.pdf.
Proposed Responses

Cl 101 SC 101.1.3 P 132 L 44 # 4044
Trowbridge, Steve Alcatel-Lucent

Comment Type E Comment Status D EZ
A few misalignments in Figure 101-1. For example, the MDI box at the bottom doesn't line up with the coax line below.

SuggestedRemedy
Zoom in close and tidy up the figure by nudging the elements to line up.

Proposed Response Response Status W
PROPOSED ACCEPT.

Cl 101 SC 101.3.3.1.7 P 162 L 54 # 4045
Trowbridge, Steve Alcatel-Lucent

Comment Type E Comment Status D EZ, comprised
Misuse of "comprised"

SuggestedRemedy
Replace "comprised" with "composed"

Proposed Response Response Status W
PROPOSED ACCEPT.

Cl 101 SC 101.4.1.2.2 P 169 L 36 # 4046
Trowbridge, Steve Alcatel-Lucent

Comment Type E Comment Status D
This time "comprise" is OK, but spurious "of"

SuggestedRemedy
Replace "burst may comprise of one or more" with "burst may comprise one or more" (since "comprise" means "include" in this context)

Proposed Response Response Status W
PROPOSED ACCEPT.

Cl 101 SC 101.4.2.6 P 175 L 48 # 4047
Trowbridge, Steve Alcatel-Lucent

Comment Type E Comment Status D EZ, comprised
Misuse of "comprised"

SuggestedRemedy
Replace "comprised" with "composed"

Proposed Response Response Status W
PROPOSED ACCEPT.

Cl 101 SC 101.4.2.6.1 P 176 L 39 # 4048
Trowbridge, Steve Alcatel-Lucent

Comment Type E Comment Status D EZ
At least one misalignment in Figure 101-18: the box around the "P" (preamble) box to the right of the PHY LINK box is offset slightly higher than the rest of the line.

SuggestedRemedy
Zoom in close and nudge the elements to line up and tidy up the figure.

Proposed Response Response Status W
PROPOSED ACCEPT.

Cl 101 SC 101.4.2.7 P 180 L 15 # 4049
Trowbridge, Steve Alcatel-Lucent

Comment Type E Comment Status D EZ
Some misalignment in Figure 101-19. The arrow down to the lower left XOR crosses slightly over the line above. If the arrows down from the Seed (0x4732BA) box were intended to touch the box, they don't.

SuggestedRemedy
Zoom in close and nudge the elements to line up where intended.

Proposed Response Response Status W
PROPOSED ACCEPT.
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<td>E</td>
<td>D</td>
<td>Misuse of &quot;comprised&quot;</td>
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<tr>
<td>102.1.2</td>
<td>102</td>
<td>E</td>
<td>D</td>
<td>Misalignments in Figure 102-4: The four &quot;to PMA&quot; instances are all slightly different levels from each other and the arrows down to them are slightly different lengths.</td>
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<td>At least one misalignment in Figure 102-18: the arrow looping back into the WAIT state at the top goes beyond the line of the box.</td>
<td>PROPOSED ACCEPT</td>
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<td>E</td>
<td>D</td>
<td>At least one misalignment in Figure 103-2: the MDI box at the bottom is misaligned with the coax box below</td>
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<td>103</td>
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<td>D</td>
<td>At least one misalignment in Figure 103-23: the arrow from &quot;BEGIN&quot; doesn't touch the &quot;WAIT&quot; box below</td>
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<td>4056</td>
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<td>D</td>
<td>At least one misalignment in Figure 103-31: the line down from B0 extends past the horizontal line as the arrow turns to the right.</td>
<td>PROPOSED ACCEPT.</td>
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<td>4057</td>
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<td>typo - &quot;it not being modified&quot; should be &quot;is not being modified&quot; - 2 instances, lines 15 and 25</td>
<td>PROPOSED ACCEPT.</td>
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<td>spelling &quot;recieved&quot;</td>
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The commenter is encouraged to submit a maintenance request against the soon to be standard (802.3bx) and fix an identical problem in Figure 77-33 on page 344.

The generic definition of channel in 802.3 causes no end of pain, as it is a common word used (and tempting to use) in most PHY clauses (where the proper term is usually link segment). The tightening of the current definition to reference 10BROAD36 and Clause 11 is a recent fix to at least make the definition appropriately restricted. It is encouraged not to expand the use of the term "channel" without any modifiers (e.g., OFDM channel should be OK).

Even the use in clause 100 has inconsistent uses of the generic 'channel' and this defined term (e.g., "under baseline channel conditions..."). I highly recommend use a different term for the meaning of 'channel' as a tuned frequency band.

Replace uses of 'channel' where it means a band of frequencies dedicated to a certain service transmitted on the broadband medium, by not modifying the legacy defintion, but inserting and using a new term: 'frequency channel' with the same defintion as currently listed and adding to the definition: "This is identical to the definition of 'channel' used in clause 11 and defined in 1.4.134, but is added to avoid confusion with the common, generic use of the term."

(Note - frequency channel would be consistent with what is used in table 45-98c)
Proposed Responses

Comment ID  4060
Zimmerman, George  
CME Consulting, Inc.

Comment Type  ER  Comment Status  D

What units is the "lowest frequency subcarrier" represented in here? I'm guessing it is meant to be subcarrier number, but given that other references were in Hz denoted as multiples of a 50kHz step, this should be spelled out. Also for US PHY Link Start (45.2.1.139.1).

The pointed to references don't specify either.

SuggestedRemedy

Clarify - if it is subcarrier number, then say it, or better, give the equivalent step size in frequency units (Hz, kHz, etc.)

PROPOSED ACCEPT IN PRINCIPLE.

Pg 44 line 35 change "Bits 1.1911.11:0 set the starting subcarrier of the downstream " to "Bits 1.1911.11:0 set the starting subcarrier number of the downstream "

Pg 45 line 9 change: "Bits 1.1912.11:0 set the starting subcarrier of the upstream" to "Bits 1.1912.11:0 set the starting subcarrier number of the upstream"

Comment ID  4061
Zimmerman, George  
CME Consulting, Inc.

Comment Type  ER  Comment Status  D  EZ

Editing instruction is "change" - just show changed rows in Table 56-1 - most of them are unchanged, and it makes it hard to find the edit. Moreover, it looks like the change is to insert two rows, so the editing instruction should be "insert"

SuggestedRemedy

Change editing instruction to "Insert four new columns to the right of the existing columns, and 2 new rows at the end of Table 56-3 (unchanged rows not shown)

Delete unchanged rows from the table. Show the new rows without underline. (coordinate with IEEE staff whether new column headers should be underlined - that's above my pay grade...)

PROPOSED ACCEPT.

As noted with exception of adding only one row at the end, following "10GBASE-PR-U4". NOTE: the column headers should be cross references to the appropriate clauses.

Proposed Response  Response Status  W

PROPOSED ACCEPT. Note: P. Anslow has been ok with this however, happy to change..<g>

Comment ID  4062
Zimmerman, George  
CME Consulting, Inc.

Comment Type  ER  Comment Status  D  EZ

Editing instruction "change" should be "insert"

SuggestedRemedy

Change editing instruction to "Insert four new columns to the right of the existing columns, and 2 new rows at the end of Table 56-3 (unchanged rows not shown)

Delete unchanged rows from the table. Show the new rows without underline. (coordinate with IEEE staff whether new column headers should be underlined - that's above my pay grade...)

PROPOSED ACCEPT.

As noted with exception of adding only one row at the end, following "10GBASE-PR-U4". NOTE: the column headers should be cross references to the appropriate clauses.

Proposed Response  Response Status  W

PROPOSED ACCEPT. Note: P. Anslow has been ok with this however, happy to change..<g>
Description of register is unclear: "Register 1.1908 indicates the center frequency, in steps of 50 kHz, of subcarrier 0 for the upstream OFDM channel. Subcarriers are numbered from 0 to 4095 with subcarrier 0 at the lowest frequency. This definition equates to a center frequency from 0 MHz to 3.27675 GHz in 50 kHz steps. The minimum value for this register is 100."

Does this mean the value in the register is the frequency (in Hz) / 50 kHz? How can the minimum value be 100 (assumed decimal) if the register equates from a center frequency from 0 MHz to 3.27675 GHz? Minimum frequency should be 5 MHz then, if I am correct that this register = center frequency (Hz) / 50 000.

**Suggested Remedy**

- Insert after "in steps of 50 kHz", ", e.g., the value equals the center frequency (Hz) divided by 50 000."
- Replace "center frequency from 0 MHz" with "center frequency from 5 MHz".
- Editor to search and correct other references (e.g., 100.2.7.3 page 90, line 50) to the start frequency.

**Proposed Response**

PROPOSED ACCEPT IN PRINCIPLE.

Changed from Cl 45 to Cl 00

Change here and 2x in Cl 100 (Pg 90 lines 41 & 48)
- "in steps of 50 kHz" to
- "in units of 50 kHz"

Replace "center frequency from 0 MHz" with "center frequency from 5 MHz" here and Cl; 100 Pg 90 line 51.

In Table 45–98c

Change
- "first OFDM channel" to
- "first downstream OFDM channel" (make a similar in remaining rows)

In Table 45–98e change:
- "This specifies the center frequency of subcarrier 0 of the upstream OFDM channel in steps of 50 kHz."
- to
- "This specifies the center frequency of subcarrier 0 of the upstream OFDM channel"

OFDM is defined as a modulation technique already. It is inappropriate for a device name - it makes no sense if you spell out the acronym as defined. Additionally, you can't tell if the OFDM device is a new sublayer, a type of PMA/PMD or a complete PHY with multiple sublayers. - it isn't in any layering diagram I was able to find. an OFDM framer shows up as a subpart of a PMA in Figure 100-3, but that doesn't seem to fit the bill for a 'device included in package' - that would be handled by the PMA.

**Suggested Remedy**

- Replace "OFDM" with "OFDM PMA/PMD" (if PMA/PMD is, in fact appropriate, or if something else, e.g., PHY, then add that) on line 31, editor to search and make corresponding replacements (e.g., lines 11 & 12 page 32)
- Additionally, show the device "OFDM PMA/PMD" (or PHY or whatever) in the layering diagrams of clauses 76, 100 and 101, as appropriate.

**Proposed Response**

PROPOSED ACCEPT IN PRINCIPLE.

Changed from Cl 45 to Cl 00

In Table 45–1 change
- OFDM to
- OFDM PMA/PMD

Change:
- "45.2.7a OFDM registers" to
- "45.2.7a OFDM PMA/PMD registers"

Pg 58 line 5 change:
- "OFDM MMD" to
- "OFDM PMA/PMD MMD"

In Table 45–211a change
- "OFDM registers" to
- "OFDM PMA/PMD registers"

In Fig 100-1, 101-1, and 103-2 change (2x)
- "PMA (Clause 101)" to
- "OFDM PMA (Clause 101)"

and
- "XR-type PMD (Clause 100)" to
- "OFDM PMD (Clause 100)"
IEEE 802.3bn EPON Protocol over Coax (EPoC) TF Initial Working Group ballot comments

Proposed Responses

Comment ID 4065

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Zimmerman, George
CME Consulting, Inc.

Comment Type E
Comment Status D

Editing instruction is "Change", changes are hard to find because they are not until the next page - recommend just having the changed entries, rather than the entire table, as other drafts are changing this.

Suggested Remedy
Just show the changed rows.

Proposed Response
Response Status W

PROPOSED ACCEPT IN PRINCIPLE.
Remove 1st part of table (Bits 1.7.15:10, 1.7.9, .1.7.8 & 1.7.7:6)

"Change Table 45–7 as follows (unchanged rows not shown):"

Comment Status D
Response Status W

Comment ID 4066

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Regev, Alon
Ixia

Comment Type E
Comment Status D

"802.3xx" should be "802.3bn"

Suggested Remedy
change "802.3xx" to "802.3bn"

Proposed Response
Response Status W

PROPOSED ACCEPT.

Comment ID 4069

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Regev, Alon
Ixia

Comment Type E
Comment Status D

"802.3xx" should be "802.3bn"

Suggested Remedy
change "802.3xx" to "802.3bn"

Proposed Response
Response Status W

PROPOSED ACCEPT.

Comment ID 4070

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Regev, Alon
Ixia

Comment Type E
Comment Status D

"registers" misspelled as "reggisters"

Suggested Remedy
change "reggisters" to "registers"

Proposed Response
Response Status W

PROPOSED ACCEPT.

Type: TR/technical required ER/editorial required GR/general required T/technical E/editorial G/general
Comment Status: D/dispatched A/accepted R/rejected Response Status: O/open W/written C/closed U/unsatisfied Z/withdrawn
Sort Order: Comment ID

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Draft 2.0

IEEE 802.3bn EPON Protocol over Coax (EPoC) TF Initial Working Group ballot comments

Proposed Responses

Cl 99 SC ToC P 15 L 5 # 4071
Regev, Alon Ixia

Comment Type E Comment Status D
On page 15, line 5, leading dots are added inbetween "(1.1951.15:8" and ")" (to read "(1.1951.15:8.............................................. )")
On some of the following lines, the heading naee in the ToC seem to be right aligned rather than left aligned

SuggestedRemedy
Fix ToC

Proposed Response Response Status W
PROPOSED ACCEPT IN PRINCIPLE.
See cmt# 3976

Cl 101 SC 101.3.2.1.2 P 136 L 21 # 4074
Dwelley, David Linear Technology

Comment Type E Comment Status D
Missing space: "excluding the64B/65B sync header"

SuggestedRemedy
Change to: "excluding the 64B/65B sync header"

Proposed Response Response Status W
PROPOSED ACCEPT IN PRINCIPLE.
Wrong clause, correct page and line number. This comment is against 101.3.2.1.2. Accept as suggest.

Cl 102 SC 102.1 P 235 L 6 # 4075
Dwelley, David Linear Technology

Comment Type E Comment Status D
Extra apostrophe: "between the CLT PHY and its' subtended CNU"

SuggestedRemedy
Change to: "between the CLT PHY and its subtended CNU"

Proposed Response Response Status W
PROPOSED ACCEPT IN PRINCIPLE.
See Comments #4159 & 4162

Cl 100 SC 100.1.3 P 78 L 16 # 4073
Dwelley, David Linear Technology

Comment Type E Comment Status D
Missing ")" after "PMA (Clause 101" label

SuggestedRemedy
Change to: "PMA (Clause 101)"

Proposed Response Response Status W
PROPOSED ACCEPT.

Cl 56 SC 56.1.2.1 P 67 L 39 # 4076
Rahman, Saifur Comcast Cable

Comment Type E Comment Status D
Not sure if this is accurate: nominal bit rate of...up to 10 Gb/s in the upstream direction.

SuggestedRemedy
Align state bit rate stated in clause 100.1 with above by changing 10 Gb/s to 1.6 Gb/s.

Proposed Response Response Status W
PROPOSED ACCEPT.
Coordinate with comment #3743
IEEE 802.3bn EPON Protocol over Coax (EPoC) TF Initial Working Group ballot comments

**Proposed Responses**

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**Comment ID 4077**

**Comment Type** E **Comment Status** EZ

Following implies there are example(s) of EPoC topologies in the subclause but was unable to find figure for EPoC.

This subclause also shows some examples of different P2MP PON and EPoC topologies.

**Suggested Remedy**

Add figure and reference or if figure exists reference to it.

**Proposed Response** Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

No figure was supplied by the commenter. (We deleted this figure in prior comments rounds and removed text, but missed removing this sentence.) Delete the sentence: "This subclause also shows some examples of different P2MP PON and EPoC topologies."

---

<table>
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**Comment ID 4078**

**Comment Type** T **Comment Status** W

Formula for extended symbol duration does not include the rolloff time.

**Suggested Remedy**

Verify definition of extended symbol does not include roll off time

**Proposed Response** Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

From RF folks: we have verified that the rolloff time is not included and intended not be included.

---

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**Comment ID 4080**

**Comment Type** E **Comment Status** D

Clause 103 is not mentioned in the summary description of of the functional layers of EPoC as stated below.

Clause 100 focuses on functions of the PMD sublayer, Clause 101 focuses on PCS and PMA, and Clause 102 focuses on PHY Link.

**Suggested Remedy**

Add description that Clause 103 is a modified version of MPCP for EPoC

**Proposed Response** Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

In subclause title for 100.1.3, change "within" to "supporting". Add separate paragraph following line 44:

"Clause 103 replicates portions of Clause 77 Multipoint MAC Control Protocol (MPCP) with updates necessary for EPoC operation."

---

**Comment ID 4081**

**Comment Type** T **Comment Status** D

**Proposed Response** Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

No figure was supplied by the commenter. (We deleted this figure in prior comments rounds and removed text, but missed removing this sentence.) Delete the sentence: "This subclause also shows some examples of different P2MP PON and EPoC topologies."

---

**Comment ID 4082**

**Comment Type** T **Comment Status** D

**Proposed Response** Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

From RF folks: we have verified that the rolloff time is not included and intended not be included.

---

**Comment ID 4083**

**Comment Type** E **Comment Status** D

Clause 103 is not mentioned in the summary description of of the functional layers of EPoC as stated below.

Clause 100 focuses on functions of the PMD sublayer, Clause 101 focuses on PCS and PMA, and Clause 102 focuses on PHY Link.

**Suggested Remedy**

Add description that Clause 103 is a modified version of MPCP for EPoC

**Proposed Response** Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

In subclause title for 100.1.3, change "within" to "supporting". Add separate paragraph following line 44:

"Clause 103 replicates portions of Clause 77 Multipoint MAC Control Protocol (MPCP) with updates necessary for EPoC operation."

---

**Comment ID 4084**

**Comment Type** T **Comment Status** D

**Proposed Response** Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

From RF folks: we have verified that the rolloff time is not included and intended not be included.

---

**Comment ID 4085**

**Comment Type** E **Comment Status** D

Clause 103 is not mentioned in the summary description of of the functional layers of EPoC as stated below.

Clause 100 focuses on functions of the PMD sublayer, Clause 101 focuses on PCS and PMA, and Clause 102 focuses on PHY Link.

**Suggested Remedy**

Add description that Clause 103 is a modified version of MPCP for EPoC

**Proposed Response** Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

In subclause title for 100.1.3, change "within" to "supporting". Add separate paragraph following line 44:

"Clause 103 replicates portions of Clause 77 Multipoint MAC Control Protocol (MPCP) with updates necessary for EPoC operation."

---

**Comment ID 4086**

**Comment Type** T **Comment Status** D

**Proposed Response** Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

From RF folks: we have verified that the rolloff time is not included and intended not be included.

---

**Comment ID 4087**

**Comment Type** E **Comment Status** D

Clause 103 is not mentioned in the summary description of of the functional layers of EPoC as stated below.

Clause 100 focuses on functions of the PMD sublayer, Clause 101 focuses on PCS and PMA, and Clause 102 focuses on PHY Link.

**Suggested Remedy**

Add description that Clause 103 is a modified version of MPCP for EPoC

**Proposed Response** Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

In subclause title for 100.1.3, change "within" to "supporting". Add separate paragraph following line 44:

"Clause 103 replicates portions of Clause 77 Multipoint MAC Control Protocol (MPCP) with updates necessary for EPoC operation."

---

**Comment ID 4088**

**Comment Type** T **Comment Status** D

**Proposed Response** Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

From RF folks: we have verified that the rolloff time is not included and intended not be included.

---

**Comment ID 4089**

**Comment Type** E **Comment Status** D

Clause 103 is not mentioned in the summary description of of the functional layers of EPoC as stated below.

Clause 100 focuses on functions of the PMD sublayer, Clause 101 focuses on PCS and PMA, and Clause 102 focuses on PHY Link.

**Suggested Remedy**

Add description that Clause 103 is a modified version of MPCP for EPoC

**Proposed Response** Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

In subclause title for 100.1.3, change "within" to "supporting". Add separate paragraph following line 44:

"Clause 103 replicates portions of Clause 77 Multipoint MAC Control Protocol (MPCP) with updates necessary for EPoC operation."

---

**Comment ID 4090**

**Comment Type** T **Comment Status** D

**Proposed Response** Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

From RF folks: we have verified that the rolloff time is not included and intended not be included.
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**Proposed Response**

**Comment ID:** 4081

Proposed Response

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Somewhat confusing:

"All codeword encoding follows the same procedures as the downstream with the following differences:"

Similar issue pg 158 in 20 with:

"All codeword decoding follows the same procedures as the downstream with the following differences:"

**Suggested Remedy**

To:

"All upstream FEC encoding follows the same procedures as the downstream with the following differences:"

and:

"All upstream FEC decoding follows the same procedures as the downstream with the following differences:"

**Proposed Response**

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**Comment ID:** 4082

Proposed Response

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Wording:

"The CLT receiving PCS process receives an upstream burst from a CNU from the PMA Client of a length of R bits."

**Suggested Remedy**

To:

"The CLT receives an upstream burst with a length of R bits from a CNU via the PMA Client."

**Proposed Response**

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wording:

This variable used for counting

**Suggested Remedy**

This variable is used for counting

**Proposed Response**

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Formatting of "Extract BQ 65B Blocks"

**Suggested Remedy**

Subscript the "Q"

**Proposed Response**

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**Comment ID:** 4085

Proposed Response

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Double double ref ref "per Table 101–2 or Table 101–2)"

**Suggested Remedy**

Remove one ref

**Proposed Response**

<table>
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<td>Proposed Accept</td>
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The two para's beginning with "In the EPoC OFDM link the modulation or each subcarrier ..." duplicates the description in the 1st two para of this section.

Proposed Response

Strike the two para's from line 17-24

PROPOSED ACCEPT.

"was just update by the above actions ..."

Proposed Response

"was just updated by the above actions ..."

PROPOSED ACCEPT.

"been prepared for by the"

Proposed Response

"been prepared by the"

PROPOSED ACCEPT.

Stray period and space before ref, none after:

"See . 100.2.7.3"

Proposed Response

"See 100.2.7.3."

PROPOSED ACCEPT.

"No MAC data is transmitted during the burst marker."

Proposed Response

per comment.

PROPOSED ACCEPT.

Do last to keep numbering consistent with comments
IEEE 802.3bn EPON Protocol over Coax (EPoC) TF Initial Working Group ballot comments

Proposed Responses

Comment ID 4092

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Comment Type E

Comment Status D

Wording (tense) in FIRST description
"... otherwise the bit receive from the processed ..."
And on line 21 in FRB:
"... values if from ..."
Also on line 38 in IRB
"... values if from ..."
Also on line 43 in IRE
"... values if from ..."
Line 48 in LBIT
undefined TLA "RE"

Suggested Remedy
- "... otherwise the bit from the processed ..."
- "... values is from ..."

"RE" -> "resource element"

Proposed Response

Response Status W

PROPOSED ACCEPT.

Task Force to check description of FIRST line 15 for clarity

Comment ID 4093

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Comment Type E

Comment Status D

Table 101-7 does not relate to the CLT Master Clock
"the 10.24 MHz CLT Master Clock (Table 101–7)"

Suggested Remedy
Remove the ref to Table 101-7.

Proposed Response

Response Status W

PROPOSED ACCEPT.

Comment ID 4094

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Comment Type E

Comment Status D

This sentence could use a ref to Fig 102-12
"The Timestamp marks the first subcarrier of the first symbol after the Preamble."

Suggested Remedy
Add ref. to end of sentence "(see Figure 102-12)"

Proposed Response

Response Status W

PROPOSED ACCEPT.

Comment ID 4095

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Comment Type E

Comment Status D

"on a excluded"

Suggested Remedy
Change to
"on an excluded"

Proposed Response

Response Status W

PROPOSED ACCEPT.

Comment ID 4096

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Comment Type E

Comment Status D

Several links not correct and/or live
In 36: 101.4.3.6.4 should be 101.4.2.7.
In 37: 101.4.3.6.x should be ???
In 40: 101.4.2.1 should be 101.3.2.5.6

Suggested Remedy
Make links live with correct SCI number per comment

Proposed Response

Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

Ref @ line 37 s/b to 101.4.2.8.7
IEEE 802.3bn EPON Protocol over Coax (EPoC) TF Initial Working Group ballot comments

Proposed Responses

Comment ID 4097
Remain, Duane
Huawei Technologies

Cl 101 SC 101.4.2.8.3 P 183 L 36 # 4097

Comment Type: E

Proposed Response

The TLA LLR only appears twice in the draft once where it is defined and once where it is used 7 lines later. A quick google search indicates this should be "log-likelihood ratios" without caps and only one hyphen.

SuggestedRemedy
Remove the TLA definition and replace it in line 44 with "log-likelihood ratios". At line 36 change "Log-Likelihood-Ratios" to "log-likelihood ratios"

PROPOSED ACCEPT.

Comment ID 4098
Remain, Duane
Huawei Technologies

Cl 101 SC 101.4.2.9.2 P 185 L 41 # 4098

Comment Type: E

Proposed Response

Verb tense "If NI were not divisible ... branches would not be filled." Change to "If NI is not divisible ... branches are not filled.

PROPOSED ACCEPT.

Comment ID 4099
Remain, Duane
Huawei Technologies

Cl 101 SC 101.3.2.1.1 P 135 L 30 # 4099

Comment Type: T

Proposed Response

"The number of 72-bit vectors constituting the parity (overhead) portion of a FEC codeword." Change to: "The number of 72-bit vectors constituting the overhead (parity and CRC40) portion of a FEC codeword.

PROPOSED ACCEPT.

Comment ID 4100
Remain, Duane
Huawei Technologies

Cl 101 SC 101.3.2.5.2 P 145 L 16 # 4100

Comment Type: T

Proposed Response

The para beginning "The 64B/66B Encoder ..." should either be moved to 101.3.2.2 64B/66B Encoder or stricken as it has little to do with LDPC encoding. The only pertinent sentence is the one regarding burst time header that is buried in the middle of this para and incorrectly talks about the CLT.

SuggestedRemedy
Add a period after "Table 101-2" in the 1st para of this section.

Replace the 2nd para with "The 64B/66B Encoder, as described in 101.3.2.2 and shown in Figure 101-6, delivers a stream of 65-bit blocks to the FEC Encoder and Data Detector. In the CNU only, a 65-bit burst time header is added as the first 65-bit block at the start of a burst (see Figure 101-10)."

PROPOSED ACCEPT.

Comment ID 4101
Remain, Duane
Huawei Technologies

Cl 101 SC 101.3.2.5.6 P 149 L 17 # 4101

Comment Type: T

Proposed Response

"payload portion of the downstream FEC codeword" so it reads: "payload portion of the FEC codeword"

PROPOSED ACCEPT.

Comment ID 4102
Remain, Duane
Huawei Technologies

Cl 101 SC 101.3.2.5.7 P 149 L 18 # 4102

Comment Type: T

Proposed Response

"payload portion of the downstream FEC codeword" so it reads: "payload portion of the FEC codeword"

PROPOSED ACCEPT.
Proposed Response

**Comment ID** 4102

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Remein, Duane Huawei Technologies

**Comment Type** T **Comment Status** D

What is "CP" in dataParity<FR-1+CP:0>
Should this be BP?

**Suggested Remedy**
Change to BP

**Proposed Response** Response Status W
PROPOSED ACCEPT.

*** Task Force to confirm. ***

---

**Comment ID** 4103

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</table>

Remein, Duane Huawei Technologies

**Comment Type** T **Comment Status** D

A 65-bit block cannot have a sync header of 10 as there is only one sync bit in a 65-bit block.

**Suggested Remedy**
Per Figure 101-6 this should be bit 1 (of bits 0 & 1) and per Figure 49-7 this should be a 0 for control blocks
Change:
"sync header 10 (binary)." to
"sync header 0 (binary)."

**Proposed Response** Response Status W
PROPOSED ACCEPT.

*** Task Force to confirm. ***

---

**Comment ID** 4104

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</table>

Remein, Duane Huawei Technologies

**Comment Type** T **Comment Status** D

TRUE, but when is it set to false I wonder.

**Suggested Remedy**
add "This variable is reset to FALSE upon read." at end of description

**Proposed Response** Response Status W
PROPOSED ACCEPT.

See Cmt # 4105
Comment ID 4107

Proposed Responses

Cl 101 SC 101.4.2.1 P 170 L 43 # 4107
Remain, Duane Huawei Technologies

Comment Type T Comment Status D Clock Terminology

There is no "sampling rate clock" in Table 101–7

Suggested Remedy
Change from:
"All OFDM channels use the same sampling rate clock as per Table 101–7, cyclic prefix size, window size, and follow the same frame timing."

to:
"All OFDM channels use the same OFDM symbol clock, cyclic prefix size, window size, and follow the same frame timing."

PROPOSED ACCEPT.

Comment ID 4108

Proposed Responses

Cl 00 SC 0 P 258 L 10 # 4108
Remain, Duane Huawei Technologies

Comment Type T Comment Status D

OFDM clock (1/204.8) is a bit too slow

Same/similar issue at:
Pg 99 ln 37 (figure 100-6)
Pg 171 ln 28 (Table 101-7, 2x)
Pg 159 ln 23

Suggested Remedy
Change to OFDM clock (1/204.8 MHz)

PROPOSED ACCEPT.

Comment ID 4109

Proposed Responses

Cl 101 SC 101.4.2.10 P 190 L 44 # 4109
Remain, Duane Huawei Technologies

Comment Type T Comment Status D

Elsewhere in this section we refer to the output of the SR as Wk in Figure 101-26 it is W1. We should be consistent.

Suggested Remedy
Change W1 to Wk in Fig 101-26 as in the text.

PROPOSED ACCEPT.

Comment ID 4110

Proposed Responses

Cl 101 SC 101.4.3.3 P 198 L 15 # 4110
Remain, Duane Huawei Technologies

Comment Type T Comment Status D

There is no statemachine as implied in this statement:
"The state machine of Framing Timing implemented the RB Superframe structure timing as per 101.4.3.3.1."

Suggested Remedy
Strike the sentence, the topic is well covered in subsequent SCs.

PROPOSED ACCEPT.

Comment ID 4111

Proposed Responses

Cl 101 SC 101.4.3.3.5 P 200 L 36 # 4111
Remain, Duane Huawei Technologies

Comment Type T Comment Status D

"through RBsize for each RB Frame" but RBsize is a boolean!

Suggested Remedy
Change to read:
"through RBlen(RBsize) for each RB Frame"

PROPOSED ACCEPT.

Comment ID 4112

Proposed Responses

Cl 101 SC 101.4.3.5.2 P 206 L 17 # 4112
Remain, Duane Huawei Technologies

Comment Type T Comment Status D

Previously we decided that only the US_ModTypeSC(n)/DS_ModTypeSC(n):
"based on the profile descriptor information"

Suggested Remedy
strike "profile" to the statement reads:
"based on the descriptor information"

PROPOSED ACCEPT.
This statement "Downstream channel acquisition time for the CNU is defined as the time
required for a CNU with no previous
network frequency plan knowledge to achieve downstream signal acquisition (frequency and
time lock)," should be restricted to time when only a single CNU is joining the network.

Suggested Remedy

Change: "time required for a CNU with no previous ..." to
"time required for a single CNU with no previous ...

Page 172, line 10. Add "(see Table 101-7)" to the end of the last sentence in the paragraph.
Page 171, line 46, Add the following table footnote "b" to the " < 60 seconds" that reads:
"Nonetheless, it is expected that the CNU would be able to achieve downstream acquisition in
less than 30 seconds."

Proposed Response

PROPOSED ACCEPT.

Proposed Response

PROPOSED REJECT.

The windowing is eaten by the next CP.

This statement regarding exclusion band limits only applies to excluded SC within the
encompassed spectrum.
"Exclusion bands are limited to 20% or less of encompassed spectrum (see Table 101–8)."

Suggested Remedy

Change to:
"Exclusion bands internal to the encompassed spectrum are limited to 20% or less of
encompassed spectrum (see Table 101–8)."

Proposed Response

PROPOSED ACCEPT.
Cl: 45  SC:  45.2.1.161.4  P: 54  L: 38  # 4117

Remain, Duane  Huawei Technologies

Comment Type: T  Comment Status: D

Register bits 1.1948.4:0 can be better aligned with the definition of DS_ModAbility.

Suggested Remedy:
In Table 45-98ae combine 1.1948.4 thru 1.1948.0 into a single entry
1.1948.4:0 | DS modulation ability | Indicates the PHYs ability to support optional downstream modulation types | RO

Combine SCI 45.2.1.161.4 thru 45.2.1.161.8 into a single sub clause to read:
45.2.1.161.4 DS modulation ability (1.1948.4:0)

Bits 1.1948.4:0 indicate the ability of the PHY to support optional downstream modulation formats 16384-QAM, 8192-QAM, 32-QAM, 16-QAM and 8-QAM. This bit is a reflection of the variable DS_ModAbility defined in 101.4.2.4.5.

Proposed Response: Response Status: W

PROPOSED ACCEPT.

Cl: 45  SC:  45.2.1.161.1  P: 53  L: 38  # 4118

Remain, Duane  Huawei Technologies

Comment Type: T  Comment Status: D

Register bits 1.1948.9:8 can be better aligned with the definition of US_ModAbility.

Suggested Remedy:
In Table 45-98ae combine 1.1948.9 and 1.1948.8 into a single entry
1.1948.9:8 | US modulation ability | Indicates the PHYs ability to support optional upstream modulation types | RO

Combine SCI 45.2.1.161.1 and 45.2.1.161.2 into a single sub clause to read:
45.2.1.161.1 US modulation ability (1.1948.9:8)

Bits 1.1948.9:8 indicate the ability of the PHY to support optional upstream modulation formats 4096-QAM and 2048-QAM. This bit is a reflection of the variable US_ModAbility defined in 101.4.3.4.4.

Proposed Response: Response Status: W

PROPOSED ACCEPT.

Cl: 101  SC:  101.4.2.6.4  P: 179  L: 32  # 4119

Remain, Duane  Huawei Technologies

Comment Type: T  Comment Status: D

Clarify which value of NCP is being referred to: "decrementing the value of NPC by one"

Suggested Remedy:
Change to:
"decrementing the initial value of NPC by one"

Proposed Response: Response Status: W

PROPOSED REJECT.

Perhaps this step will require reiteration. Therefore leave as is.

Cl: 101  SC:  101.4.2.8.1  P: 180  L: 36  # 4120

Remain, Duane  Huawei Technologies

Comment Type: T  Comment Status: D

The following counter references should use named counters
line 36 "setting an bit counter to 1"
line 41 "the FCP bit counter is incremented"
line 46 "the bit counter is reset"

Note at pg 183 line 49 is a statement "The Symbol Mapper resets the bit counter, FCPbitCnt, at the start of each downstream frame ..." which could be interpreted as resetting to zero, this should be clarified.

Note also that if each of these refers to the same counter there is a conflict between pg 180 in 36 and pg 184 in 24

Suggested Remedy:
Pg 180 Line 36 change:
"setting an bit counter to 1" to
"setting FCP bit counter (FCPbitCnt) to 1"

Pg 180 Line 41 change:
"the FCP bit counter is incremented" to
"the FCPbitCnt is incremented"

Pg 184 Line 49 change:
"resets the bit counter, FCPbitCnt, at the start ..." to
"resets the bit counter, FCPbitCnt, to zero at the start ...

Proposed Response: Response Status: W

PROPOSED ACCEPT.

Comment ID 4120  Page 112 of 124  9/8/2015 6:20:56 PM
IEEE 802.3bn EPON Protocol over Coax (EPoC) TF Initial Working Group ballot comments

**Proposed Responses**

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<td>We have no “Figure 4”</td>
<td>Change to: “Figure 101-23”, make live</td>
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<td>I believe there are one too many g2's in Figure 101-23</td>
<td>Change the rightmost to g1</td>
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<td>IF the LDPC endode process is occurring in the CNU the FP bits here may not be 14400-60 as stated: &quot;a payload length of FP - BP bits (14400 - 60 = 14340 bits).&quot; nor &quot;output codeword with a length of (FP - BP) + FR bits; i.e., (14400 - 60 ) + 1800 = 16140 bits.&quot;</td>
<td>Remove all specific numbers to the two statements read: &quot;a payload length of FP - BP bits.&quot; nor &quot;output codeword with a length of (FP - BP) + FR bits.&quot;</td>
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<td>This seems like an odd place for a requirement on SC indexing. Also this requirement is not reflected in PICS.</td>
<td>Strike the para in 101.4.2.11</td>
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<td>The statement indicate that Table 101-12 is required but there is no normative statement: &quot;Table 101–12 enumerates multiple OFDM channel operational requirements&quot;</td>
<td>&quot;Table 101–12 enumerates multiple OFDM channel operational requirements&quot;</td>
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IEEE 802.3bn EPON Protocol over Coax (EPoC) TF Initial Working Group ballot comments

Proposed Responses

Proposed Response  # 4126

Remain, Duane
华为技术有限公司

Comment Type  TR  Comment Status  D

Incomplete sentence:
"OFDMA clock timing error relative to the CLT master clock as measured at the CLT within ± 10 ns in each burst measured within any 35 second measurement period."

Note that PICS statement OT9 correlates to this statement.

Suggested Remedy

I believe this should be a requirement. Change the statement to read:
"OFDMA ... measured at the CLT shall be within ..."

Proposed Response  Response Status  W

PROPOSED ACCEPT.

Proposed Response  # 4127

Remain, Duane
华为技术有限公司

Comment Type  TR  Comment Status  D

It does not appear that RB_Frame_start is used anywhere. It is defined here, set/reset in Fig 101-29 but not used in any decision.

Suggested Remedy

Remove the unused variable.

Proposed Response  Response Status  W

PROPOSED ACCEPT.

Impacts 101.4.3.3.5 & Fig 101-29 (3x)

Proposed Response  # 4128

Remain, Duane
华为技术有限公司

Comment Type  TR  Comment Status  D

Figure 101–31 appears to begin and end a burst with Map_Start_Marker and Map_End_Marker, resp. However these functions don't make any mention of the required Type 2 Pilot that is to be added before and after the burst markers (see 101.4.3.3.2 & 101.4.3.3.4 pg 1298)

Updated burst markers no longer require Type 2 pilots before/after surst.

Suggested Remedy

remove 101.4.3.3.2 and 101.4.3.3.4

Proposed Response  Response Status  W

PROPOSED ACCEPT.

Proposed Response  # 4129

Remain, Duane
华为技术有限公司

Comment Type  TR  Comment Status  D

Missing Fig ref "See Figure 101.x.x.x."

This process "FILL_PROCESS" does not appear to be used anywhere in the draft

The same appears to be true for "Stage_RB_Frame" at pg 207 In 51

Suggested Remedy

Remove both definitions

Proposed Response  Response Status  W

PROPOSED ACCEPT.
This requirement is somewhat questionable. If we indeed require that the 8 steps starting at line 38 are required they will need additional clarification. For example what is the definition of "Known regions of interference" in Step 1, "avoiding subcarrier locations impacted by interferences like CSO/CTB" in step 5 and "perturbation of continuous pilot locations using a suitable algorithm" in Step 7. This is really a limitation of the performance of the CLT and should be open to implementation differentiation.

Also the statement at line 22 is redundant with the previous para and we never clearly state the NPC is the number of continuous pilots.

Suggested Remedy
Change at line 19-22 from:
"The CLT shall place continuous pilots (excluding the eight continuous pilots around the PHY Link) per the 8 Steps below after calculating a value for NPC using Equation (101–8). The CLT obtains the value of NPC using the following formula:" to:
"The CLT places continuous pilots (excluding the eight continuous pilots around the PHY Link) per the 8 Steps below after calculating an initial value for the number of Continuous pilots (NPC) using Equation (101–8)."

Change the statement at line 23 from:
"The number of continuous pilots is between 16 and 128. This range includes the eight continuous pilots around the PHY Link channel." to:
"The number of continuous pilots shall be between 16 and 128. This range includes the eight continuous pilots around the PHY Link channel."

Update PICS entry PI3 from:
"Continuous Pilot placement | | Meets the Equation (101–8) and the eight steps given in 101.4.2.6.4" to:
"Number of Continuous Pilots | | Between 16 and 128 including the 8 defined for the PHY Link".

Proposed Response Response Status W
PROPOSED ACCEPT.

Mnemonics introduced without full meaning: "The operation of EPoC MPCP, as ..."

Suggested Remedy
Change to:
In 29 "The operation of EPoC Multipoint Control Protocol (MPCP), as ..."

Proposed Response Response Status W
PROPOSED ACCEPT.

... removes PHY_OSsize vectors per every PHY_DSsize vectors to compensate for FEC overhead and PMD derating processes.

Format changes per comment.

Proposed Response Response Status W
PROPOSED ACCEPT.

countDelete should be in 101.3.2.1.3 Counters not 101.3.2.1.2 Variables

Suggested Remedy
Move per comment.

Proposed Response Response Status W
PROPOSED ACCEPT.
Comment Type: E  Comment Status: D

“The 10GPASS-XR encodes”
Also pg 142 line 2 “PCS operating on CCDN”

Similar problem pg 157 ling 44 for “The 10GPASS-XR decodes” and “PCS operating on CCDN” (2x)

Suggested Remedy

change to
“The 10GPASS-XR PHY encodes” &
“The 10GPASS-XR PHY decodes” &
“PCS operating on a CCDN”

PROPOSED ACCEPT.

Comment Type: E  Comment Status: D

Wording
“Every codeword in the burst has a length of determined by the number B of 65-bit blocks encoded.”

Suggested Remedy

to
“Every codeword in the burst has a length determined by the number of encoded 65-bit blocks, B, as illustrated in Equation 101-##.”

add ref to eq at line 29

PROPOSED ACCEPT IN PRINCIPLE.

Comment Type: E  Comment Status: D

Wording
“is comprised of” is considered poor English and has been replaced with “is composed of” in the frontmatter. I would think the same point applies here. Also, does a topology contain or comprise these components, or is it an abstraction of their arrangement?

Suggested Remedy

Change "topology comprised of passive segments" to e.g.
topology composed of passive segments

Scrub the other five “comprised of” in the draft.

PROPOSED ACCEPT.

Comment Type: E  Comment Status: D

Also pg 142 line 2 “PCS operating on CCDN”

Suggested Remedy

“less than or equal that shown in when”

Editorial: “less than or equal to that”?

PROPOSED ACCEPT IN PRINCIPLE. Fixed in 3930

Wording
“Every codeword in the burst has a length determined by the number of encoded 65-bit blocks, B, as illustrated in Equation 101-##.”

add ref to eq at line 29

PROPOSED ACCEPT IN PRINCIPLE.

Wording
“is comprised of” is considered poor English and has been replaced with “is composed of” in the frontmatter. I would think the same point applies here. Also, does a topology contain or comprise these components, or is it an abstraction of their arrangement?

Suggested Remedy

Change "topology comprised of passive segments" to e.g.
topology composed of passive segments
topology comprising passive segments
topology consisting of passive segments
topology containing passive segments or topology built of passive segments

topology implemented with passive segments

Scrub the other five “comprised of” in the draft.

PROPOSED ACCEPT.

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“is comprised of” is considered poor English and has been replaced with “is composed of” in the frontmatter. I would think the same point applies here. Also, does a topology contain or comprise these components, or is it an abstraction of their arrangement?

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Scrub the other five “comprised of” in the draft.

PROPOSED ACCEPT.

Change to Clause 00.
IEEE 802.3bn EPON Protocol over Coax (EPoC) TF Initial Working Group ballot comments

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Cl 102 SC 102.1 P 235 L 5 # 4162
Dawe, Piers
Mellanox

Comment Type E  Comment Status D

What to you mean by "subtend"?  You haven't defined it, and here's what M-W online says:
1
a : to be opposite to and extend from one side to the other of <a hypotenuse subtends a right angle>
b : to fix the angular extent of with respect to a fixed point or object taken as the vertex <a central angle subtended by an arc> <the angle subtended at the eye by an object of given width and a fixed distance away>
c : to determine the measure of by marking off the endpoints of <a chord subtends an arc>
2
a : to underlie so as to include
b : to occupy an adjacent and usually lower position to and often so as to embrace or enclose
SuggestedRemedy
Use a more normal word.  Link partner? connected? subordinate?
Also in two other places in the draft.

Proposed Response Response Status W
PROPOSED ACCEPT IN PRINCIPLE.
Subordinate

Cl 101 SC 101.4.1.3 P 170 L 7 # 4163
Dawe, Piers
Mellanox

Comment Type E  Comment Status D

101.4.1.2 PMA Service Interface and 101.4.1.3 PMA_UNITDATA.indication should be at the same level in the hierarchy.
SuggestedRemedy
Fix.

Proposed Response Response Status W
PROPOSED ACCEPT IN PRINCIPLE.

Cl 100 SC 100 P 77 L 1 # 4165
Dawe, Piers
Mellanox

Comment Type ER  Comment Status D

802.3 orders the clauses down the stack of sublayers, not up.
SuggestedRemedy
Swap clauses 100, PMD, and 101, RS/PCS/PMA.

Proposed Response Response Status W
PROPOSED REJECT.
There is precedence in prior EFM: Clause 60 "PMD" is before Clause 65 "RS, PCS, PMA 1000BASE-X" and Clause 75 "PMD 10GBASE-PR/PRX " is before Clause 76 "RS/PCS, PMA 10G-EPON".

Cl 56 SC 56.1.3 P 69 L 1 # 4166
Dawe, Piers
Mellanox

Comment Type ER  Comment Status D

Somewhere you need to confess that the frame loss ratio isn't up to Ethernet's usual standards (isn't EPON at 1e-12?).
SuggestedRemedy
Here?

Proposed Response Response Status W
PROPOSED ACCEPT IN PRINCIPLE.
This is already specified in the leading paragraph for both 100.2.10.2 and 100.2.12.2.
Also see comment #xxx.
We can ask the TF is they would like to add a sentence with cross references to the above two subclauses.
If the FLR for 1500-byte frames is $10^{-6}$, it could be higher or lower for larger or smaller frames depending on the relative size of the frame and the FEC block. On the one hand: Ethernet's maximum frame size was changed from 1500 bytes to 2000 bytes some years ago. On the other: a single lost FEC frame could take out several frames (more of an issue in the downstream direction, I think), so the number of lost frames per hour may be quite poor. This is why other projects specify minimum-length frames for the FLR calculation.

**Suggested Remedy**

Ensure that satisfactory performance is obtained with short frames and long frames, not just 1500-byte frames.

**Proposed Response**

PROPOSED ACCEPT IN PRINCIPLE.

From Rich Prodan: There is adequate margin in Table 100-13 and Table 100-15 to guarantee performance for all Ethernet frame sizes from 64 to 2000 bytes.

Minimum length frames were considered in the studies as summarized in:


The section on AWGN performance is relative to the two tables. MTTFPA with minimum size packets is detailed in http://www.ieee802.org/3/bn/public/sep13/prodan_3bn_02a_0913.pdf.

The September 2013 presentation calculates 26 minimum size 64 byte Ethernet frames per long size codeword. The frame loss ratio is therefore 26 times the FEC word error ratio (WER). The minimum CNR for all constellation orders in the above tables have from 3 to 6 dB of margin from the required $10^{-6}$ WER. As seen in the July 2013 presentation, this much margin provides many orders of magnitude lower WER well beyond 26 times $10^{-6}$.

A similar situation applies to a maximum 2000 byte Ethernet frame spanning multiple short size codewords. A 2000 byte frame plus 8 byte header occupies 251 65-bit line encoded blocks (with 64 bits of payload per block). The short codewords contain 800 payload bits plus 40 CRC bits that can carry 12 65-bit line encoded blocks each. So 21 short codewords can contain the 221 line encoded blocks of the 2000 byte frame. In this case, the 3 to 6 dB margin again provides many orders of magnitude lower WER well beyond 21 times 10-6.

The cable industry to date has typically worked with 1500 byte packets in its performance specifications and we used what they expect. For 2000 byte versus 1500 byte packets, there will be no issues as just explained. Text in the two areas will be modified as follows:

Page 111, Line 17, Change "The required level for CLT upstream post-FEC error ratio is defined for AWGN as less than or equal to 10-6 frame loss ratio with 1500 byte Ethernet MAC packets" to "The required level for CLT upstream post-FEC error ratio is defined for AWGN as less than or equal to 10-6 frame loss ratio with both minimum (64-byte) and maximum size (2000-byte) Ethernet frames."

Page 113, Line 42, Change "The required level for CNU downstream post-FEC error ratio shall be less than or equal to 10-6 frame loss ratio when operating at a CNR as shown in Table 100-15, under input load and channel conditions as follows with both minimum and maximum size Ethernet frames." to "The required level for CNU downstream post-FEC error ratio shall be less than or equal to 10-6 frame loss ratio when operating at a CNR as shown in Table 100-15, under input load and channel conditions as follows with both minimum and maximum size Ethernet frames."
IEEE 802.3bn EPON Protocol over Coax (EPoC) TF Initial Working Group ballot comments

Proposed Responses

Cl 103

PAR says:
It also extends the operation of Ethernet Passive Optical Networks (EPON) protocols, such as MultiPoint Control Protocol (MPCP)...

5C says:
EPoC will reuse the MAC Control and OAM as defined in the current IEEE Std 802.3 for EPON, with minimal augmentation if necessary, while developing new PHY specifications.

Objectives say:
Maintain compatibility with 1G-EPON and 10G-EPON, as currently defined in IEEE Std. 802.3 with minimal augmentation to MPCP and/or OAM if needed to support the new PHY.

Yet I see a whole new clause 103 that defines another MPCP from the ground up. That's not what the project promised.

Suggested Remedy
Combine clauses 77 and 103. Use technology-neutral variable names rather than names like "laserOffTime" and "fecOffsetC".

PROPOSED REJECT.

The Task Force believes the addition of Cl 103 is consistent with the projects PAR, 5C & objectives as quoted by the commenter and with previous EPON project deliverables whose PAR, 5C and Objectives included similar wording to create a standalone clause for MPCP.

Vote:
For (keep Cl 103):
Against (combine 103 & 77):
Abstain:

P802.3av created Cl 77. Multipoint MAC Control for 10G–EPON
PAR Scope: The scope of this project is to amend IEEE Std 802.3 to add physical layer specifications and management parameters for symmetric and/or asymmetric operation at 10 Gb/s on point-to-multipoint passive optical networks.

Technical Feasibility: "… This project reuses the Ethernet point-to-multipoint and point-to-point technologies that proved to be stable and credible. The project will extend burst mode technology to 10Gb/s. …" Objectives:
"Support subscriber access networks using point to multipoint topologies on optical fiber … Provide physical layer specifications:
– PHY for PON, 10 Gbps downstream/1 Gbps upstream, single SM fiber
– PHY for PON, 10 Gbps downstream/10 Gbps upstream, single SM fiber

Cl 101

Is this the same as the Cl.76 10GEPON RS? It should be.

Suggested Remedy
Don't create yet another RS type, re-use the 10GEPON RS.

PROPOSED REJECT.

By and large this is the same as the 10G-EPON RS described in Cl 76. However there are some significant differences. For example the registration process is described in 103.3.3 not CI 77 (see pg 133 line 18). You will notice that this subclause is quite short as it consists mostly of reference3s to previous work. The task force believe it is close to minimum size.

Should the commenter wish to make more specific suggestions for trimming they will be considered.

Passed by voice without opposition.

Dawe, Piers
Mellanox

Comment ID 4169

9/8/2015 6:20:56 PM
IEEE 802.3bn EPON Protocol over Coax (EPoC) TF Initial Working Group ballot comments

Comment ID 4170
Dawe, Piers
Mellanox

Comment Type: TR
Comment Status: D

PMA overview section is empty.

Suggested Remedy:
Needs a few paragraphs telling the reader what this PMA does, as we have for 101.3.1, overview for PCS.

Proposed Response: PROPOSED ACCEPT IN PRINCIPLE.

Add:
"This subclause defines the Physical Media Attachment (PMA) for 10GPASS-XR, supporting operation over the point-to-multipoint coaxial medium architecture. The 10GPASS-XR PMA is specified to support the operation of up to 10 Gb/s in the downstream direction and up to 10 Gb/s in the upstream direction, where the upstream and downstream data rates are configured independently.

Figure 101–1 shows the relationship between the 10GPASS-XR PMA sublayer and the ISO/IEC OSI reference model. Figure 100–2 illustrates the CLT transmitter functional block diagram, including the PMA, while Figure 100–3 illustrates the CNU transmitter functional block diagram. Figure 100–4 and Figure 100–5 illustrate the functional block diagram of the receive path in the CLT and CNU, respectively in the 10GPASS-XR PMA."

Align US rate with similar statements in 101.3.1

Comment ID 4171
Dawe, Piers
Mellanox

Comment Type: TR
Comment Status: D

"The required level for CLT upstream post-FEC error ratio is defined for AWGN as less than or equal to 10-6 frame loss ratio with 1500 byte Ethernet MAC packets." and "100.2.12.2 CNU receiver capabilities
The required level for CNU downstream post-FEC error ratio shall be less than or equal to 10-6 frame loss ratio when operating at a CNR as shown in Table 100-15, under input load and channel conditions as follows with 1500 byte Ethernet packets."

This is the PMD clause. The PMD doesn't contain the FEC: what does the PMD have to do to satisfy this condition?

Suggested Remedy:
Define PMD spec.

Proposed Response: PROPOSED ACCEPT IN PRINCIPLE.

"The required level for CLT upstream post-FEC error ratio is defined for AWGN as less than or equal to 10-6 frame loss ratio with 1500 byte Ethernet MAC packets. This section describes the conditions at which the CLT is required to meet this error ratio."

To:
"The required level for CLT upstream post-FEC error ratio is defined for AWGN as less than or equal to 10-6 frame loss ratio with 1500 byte Ethernet MAC packets. This section describes the conditions at which the PMD, PMA, PCS in conjunction are required to meet this error ratio."

Comment ID 4172
Law, David
HP

Comment Type: E
Comment Status: EZ

Now that the IEEE P802.3bn balloting group has been established, please complete the list of officers and members of the IEEE 802.3 working group.

Suggested Remedy:
Please include the list of officers and members of the IEEE 802.3 working group.

Proposed Response: PROPOSED ACCEPT.
Editor changed Clause from "FM" to 99
### IEEE 802.3bn EPON Protocol over Coax (EPoC) TF Initial Working Group ballot comments

#### Draft 2.0

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<td>Add 'RF radio frequency', in alphabetical order, to the changes to subclause 1.5 on page 27.</td>
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<td>Subclause '1.4.145b' should be numbered '1.4.144b' and subclause '1.4.146c' should be numbered '1.4.144c'.</td>
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<td>IEEE P802.3 (IEEE 802.3bx) draft D3.2 subclause 1.4 defines 'Point-to-Multipoint network (P2MP)' in subclause 1.4.331 as 'A passive optical network providing transport of Ethernet frames' so by this definition EPoC can't be a 'Point-to-Multipoint network' as it is not optical. IEEE P802.3bn draft D2.0 adds a definition for coax cable distribution network (CCDN) which is used here, however while IEEE P802.3 (IEEE 802.3bx) draft D3.2 subclause 1.5 'Abbreviations' defines 'ODN' as 'optical distribution network' there is no definition of the term in subclause 1.4. ODN is used in the existing EPON clauses, and additional uses are added in IEEE P802.3bn (e.g. subclause 56.1.2.1, page 67, line 50). Suggest that 'Point-to-Multipoint network (P2MP)' should just be used in reference to a topology, and since 'point to point' has no definition, only an abbreviation (see IEEE P802.3 (IEEE 802.3bx) subclause 1.5) the same should be true for 'point to multipoint'. There should then be two complementary definitions for the two IEEE 802.3 P2MP media, one for an 'optical distribution network (ODN)' and one for a 'coax cable distribution network (CCDN)'. An EPoC is then implemented over a P2MP optical distribution network (ODN), an EPoC network over a P2MP coax cable distribution network (CCDN). Finally the definition in subclause 1.4.144a for 'coax cable distribution network' seems a bit circular as it starts with 'coaxial distribution network' and then seems to imply a point to point connection by only mentioning 'the MDI at the CNU and the MDI at the CLT'. <strong>Suggested Remedy</strong></td>
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**Comment ID**: 4176

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**Comment Status**: D/dispatched A/accepted R/rejected

**Response Status**: O/open W/written C/closed U/unsatisfied Z/withdrawn

**Sort Order**: Comment ID

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**Type**: TR/technical required ER/editorial required GR/general required

**Comment Status**: D/dispatched A/accepted R/rejected

**Response Status**: O/open W/written C/closed U/unsatisfied Z/withdrawn

**Sort Order**: Comment ID
Reserved registers overlap registers defined in row above. Table 45-3

Change 1.1952 to 1.1958.

PROPOSED ACCEPT. Set SCI to 45.2.1. Moved "Table 45-3" from SCI to Comment

The current D2.0 draft does not include methodology to adequately support time sync functions to levels required for current Mobile BackHaul applications. The current time transport method used for EPON is included in 802.1as Clause 13 using the MPCP RTT (round trip) ranging delay, which does not require DS/US PHY time delay symmetry. PHY time delays for EPoC are expected to be much higher than for EPON (and thus even higher CLT & CNU PHY TX/RX time delay asymmetry). Thus, the downstream delay from the CLT TX MAC MPCP counter to the CNU RX MAC MPCP counter will not be exactly 1/2 of the MAC-level MPCP RTT ranging delay, which will result in an inaccurate transmission of a future time at a future MPCP frame to CNUs with time sync functionality.

Although 802.3-2012 Clause 90 includes optional registers for silicon manufacturers to specify PHY min and max TX and RX time delays, it will likely result in large min/max ranges that result in highly inaccurate time transfer from the CLT to the CNU using the methodology specified in 802.1as Clause 13.

It is proposed to
(1) Remove the Editor's Note right under the 101.5 clause title - "TimeSync capability"

(2) Add the following additional PHY delay asymmetry registers to Clause 101.5.1:

   DiffDelay_CLT - Nominal difference in time delay between the XGMII interface to the MDI interface path, and the MDI interface to the XGMII interface path for the CLT PHY in units of 1/204.8 MHz. Note that this is a signed variable (+-).

   DiffDelay Tol_CLT - The tolerance (max error) of the DiffDelay_CLT variable in units of 1/204.8 MHz

   DiffDelay_CNU - Nominal difference in time delay between the XGMII interface to the MDI interface path, and the MDI interface to the XGMII interface path for the CNU PHY in units of 1/204.8 MHz. Note that this is a signed variable (+-).

   DiffDelay Tol_CNU - The tolerance (max error) of the DiffDelay_CNU variable in units of 1/204.8 MHz

(3) Authorize the editor to make any necessary additions to Clause 45 documenting access to the above new registers

(4) Create a new sub-clause 101.5.2 with:
Title - EPoC Extensions to IEEE 802.1as, Clause 13 methodology for EPoC time transport
Content - included in: powell_3bn_01_0915.docx
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**Comment Status: D/dispatched**  **A/accepted**  **R/rejected**  **Response Status: O/open**  **W/written**  **C/closed**  **U/unsatisfied**  **Z/withdrawn**

**Comment ID:** 4181  **Page:** 124 of 124  **Date:** 9/8/2015 6:20:56 PM

**Sort Order:** Comment ID